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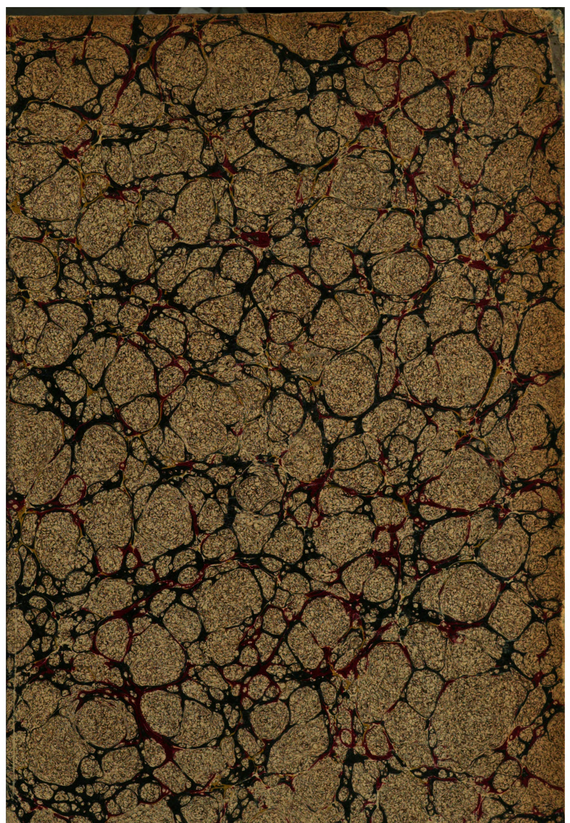
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OCT 3 1904

The Motor World

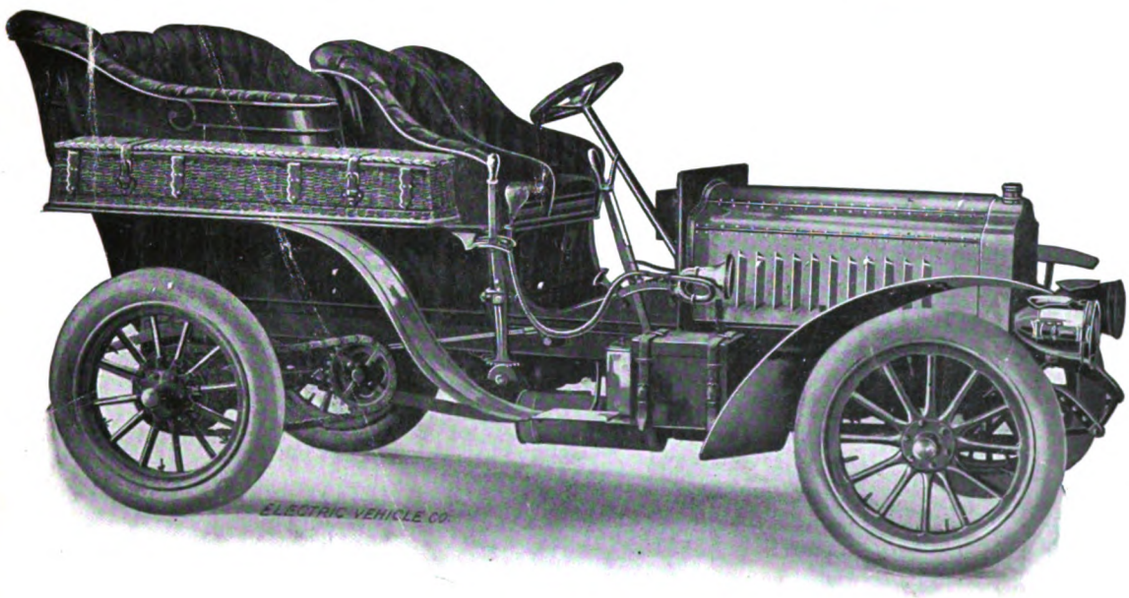
Volume IX
No. 1

New York, N. Y., U. S. A., September 29, 1904.

10 Cents a Copy
$2.00 a Year

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Columbia 30-35 H. P. Touring Car



We have not advertised this car extensively for the reason that it has been its own sufficient advertisement and the demand has kept ahead of the supply. From now on, however, we shall be able to fill orders as soon as received. The prices are:

With Standard Tonneau Body, $4000. **With Side Entrance Tonneau (Aluminum), $4500.**
With Side Entrance Tonneau (Wood), $4300. **With Limousine Body, $5000.**

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THE TIRE OF TODAY.

Easiest to Repair. ***Durable.*** ***Resilient.***

THE HIGHEST DEVELOPMENT OF THE AIR-FILLED TIRE.

Supplied by all Automobile Makers of Quality..



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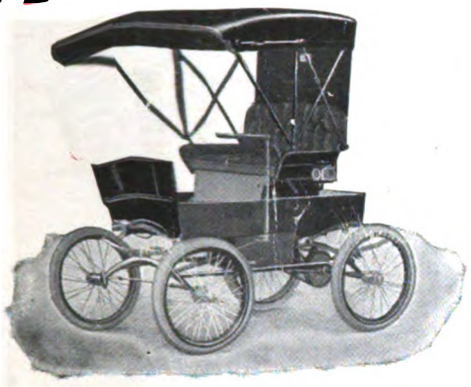
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THE HIGHEST TYPE OF ELECTRIC CARRIAGES



FORCIBLE FEATURES OF EFFICIENCY

THE BAKER RACER
THE KID

Established the world records for electrics, at Ormond Beach, Fla.—one mile, 60 3-5 seconds.

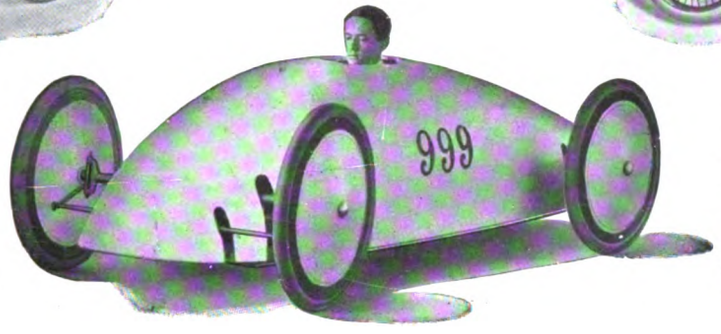
This Racer had a 3-4 h. p. motor and 12 cells of battery of same size and weight as used in our Runabout.



THE IMPERIAL

Same motor, same size battery (12 cells) as used in the Racer.

The efficiency is just the same as the Racer, only differently applied.



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Same motor, same size battery (12 cells) as used in the Racer.

The efficiency is just the same as the Racer, only differently applied.

The Bakers are the Best Made, Best Finished, Most Efficient of all Electric Carriages

THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO

WE DON'T MAKE RACING CARS
BUT

The Royal Tourist Model "K"

WON THE

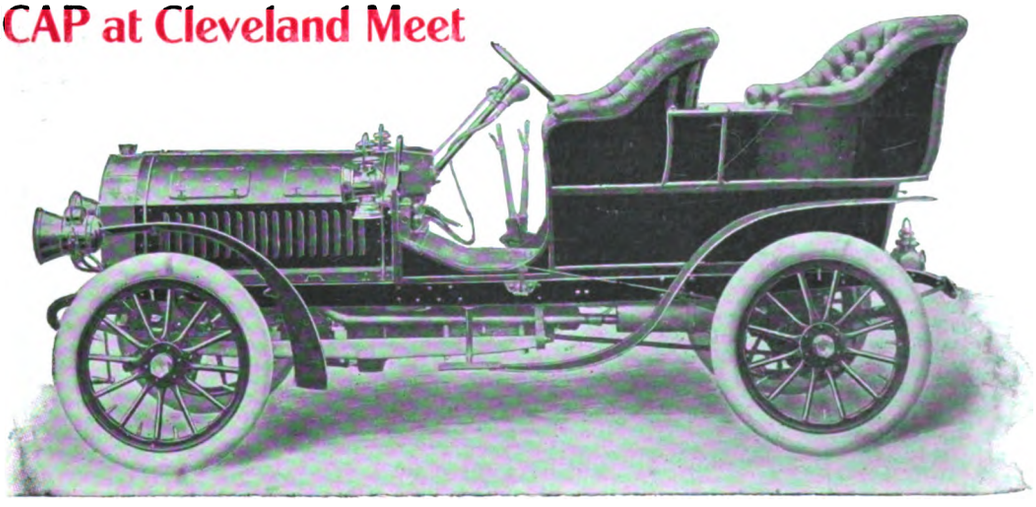
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Over all the Crack Racing Cars.

THIS IS THE CAR.

$3000.00.

September Deliveries.



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"Enter My Order for a Duplicate Set."

A thousand public and private tours and Whitman's 33 day transcontinental trip emphasize the durability of

Diamond 1904 TIRES

AS TO THEIR SPEED:

OFFICE H. S. ROSS COMPANY.

NEWTONVILLE. MASS., Sept. 19, 1904.

THE DIAMOND RUBBER COMPANY, Boston, Mass.

GENTLEMEN:—At Providence on Sept. 10th, with a Stanley steamer, I broke all records for steam cars from one mile in 57 4-5 seconds to ten miles in 10 minutes 21 seconds, and attribute much of my success to the quality of your tires. I feel confident I can procure nothing better in the tire line, and you may enter my order for a duplicate set to use at the Ormond Beach races in January.

Yours respectfully, (Signed) LOUIS S. ROSS.

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Our book on the care and use of Motor Tires will be ready soon. Yours for the asking. Address Motor Tire Dept.

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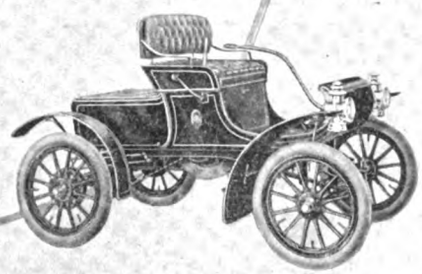
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All the time—
On time—Every time

When you're ready the Oldsmobile will go. The name stands for reliability. The Oldsmobile is *built to run and does it.*

Oldsmobiles embody all the advanced ideas and successful practical principles in automobile construction.

Oldsmobile Standard Runabout Price $650



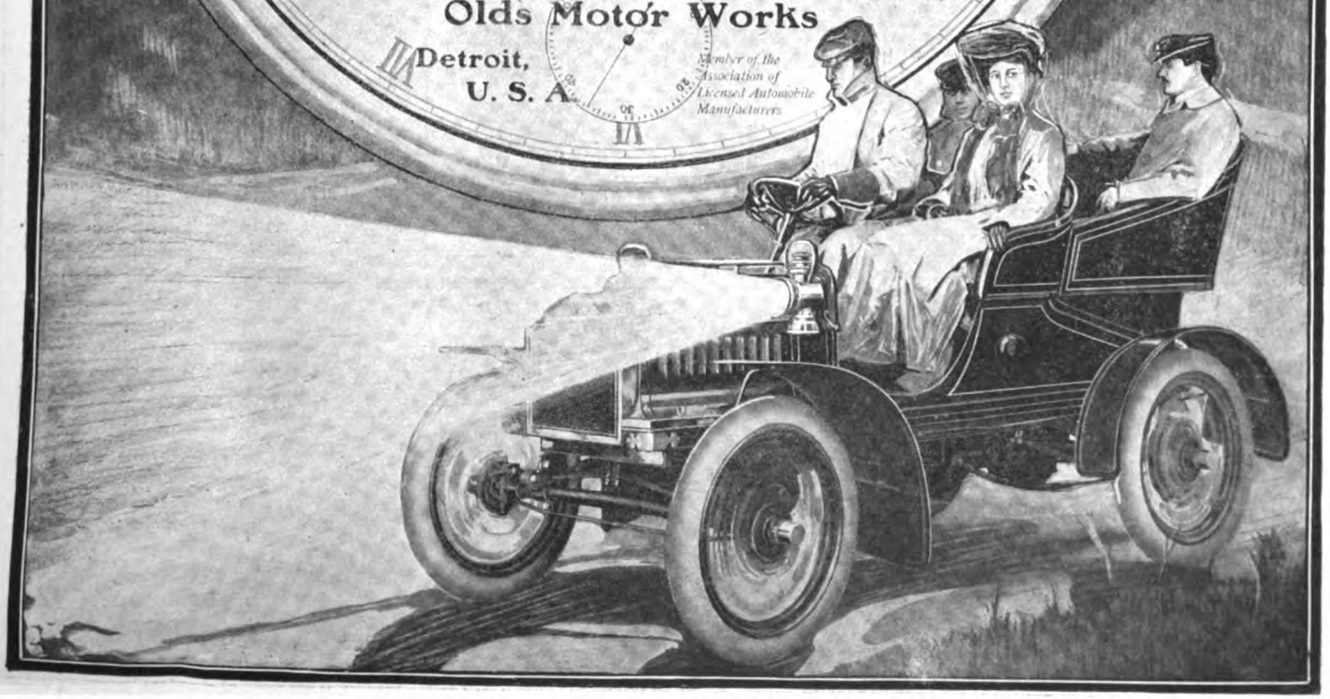
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Price $950

One of the first things that impresses you regarding the Oldsmobile Light Tonneau Car is the handsome and attractive exterior. The first ride arouses your enthusiasm over the comfortable and commodious tonneau and the perfect working of the springs. These cars are equipped with hub brakes controlled by foot lever, tilting steering post, safety device which relieves compression and prevents "back fire," honeycombed radiator, divided front seat, main bearings are self-oiling, cylinder and cylinder heads are cast integral, spark plug and carburetor accessible by lifting the foot board. These are only a few of the distinct and special features that characterize the Oldsmobile Light Tonneau Car.

For further particulars call on our nearest sales agent or write direct to

Olds Motor Works
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IN THE

GREAT ST. LOUIS TOUR.

THE BEST YET.

79 Goodrich Tires in the run, or nearly one-third of all.

21 more Goodrich Tires than any other make.

Over 50 per cent. of the Goodrich Tires started from New York, Boston, Baltimore and Philadelphia.

Nearly 50 per cent. of our nearest competitors' tires started from Chicago only.

Not a new Goodrich Tire that showed a defect or developed a weak spot or necessitated replacement.

Two old cases which had run 12,000 and 15,000 miles respectively, were replaced a short distance out from St. Louis.

Such a record speaks volumes and gives to the

ORIGINAL AMERICAN CLINCHER
The Cleanest Tire Score Ever Achieved in the History of Automobiles.

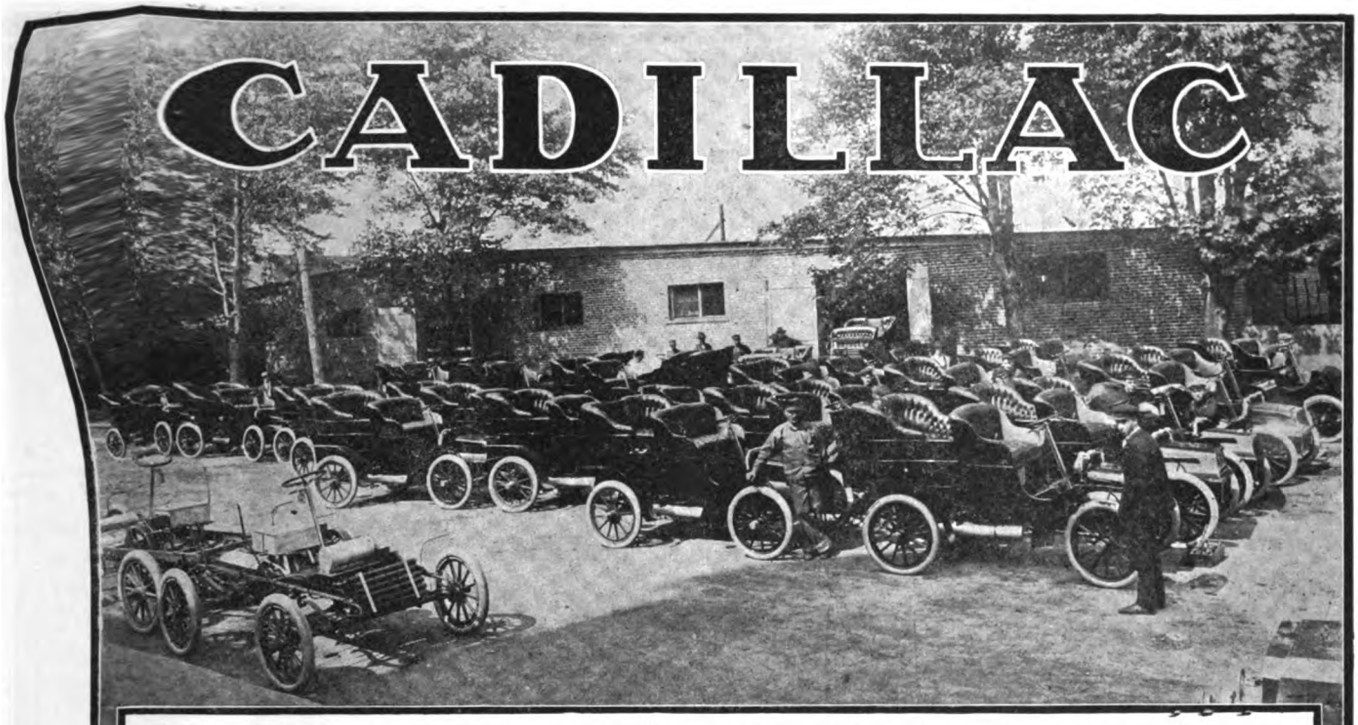
THE B. F. GOODRICH COMPANY,

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CADILLAC



A BUNCH OF "MODEL B" CADILLACS

One half of one day's product from the largest automobile makers of the world. The above lot of machines were produced 60 days after our fire and were made at the rate of over one machine every 15 minutes.

CADILLAC AUTOMOBILE COMPANY,
MEMBERS OF ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS.
DETROIT MICH.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

Unique and Unparalleled

Performance of the Pathfinder

ELMORE



The history of automobiling in America records no more sensational performance than that of the Pathfinder Elmore on the recent trip from New York to St. Louis and return. An ordinary stock car was selected to map out the roads in advance of the endurance run. This tremendous trip of more than 5000 miles over villanous roads was made by the Pathfinder Elmore with a repair bill of only 25 cents, and not a single displacement. Did any car in the endurance run—whether it cost $1000 or $10000—equal this astonishing record of the $850 Elmore?

Send for catalogue and the intensely interesting little book "One Long Jump and Two Short Steps."

THE ELMORE MFG. COMPANY,
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Members of the Association of Licensed Automobile Manufacturers.

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Suit Against Michelin Tires

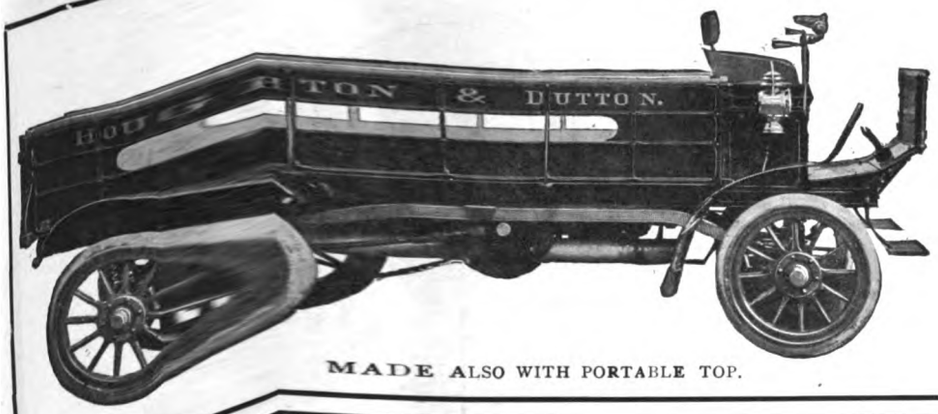
We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

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India Rubber Co.
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THE G & J TIRE CO., Indianapolis, Ind.

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MADE ALSO WITH PORTABLE TOP.

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CARS.

STAND THE TEST.

Knox Commercial Cars have shown by competitive endu tests that they are leaders among business cars They have worked night an during the most severe New England winter as well as during the hottest su days on the Pacific Coast. They have made a record not equalled by any othe of cars. Knox mechanism does it. No water to worry about. No overhe ti cylinders in summer—no freezing in winter. Send for concise pamphl Commercial Car tests, and call on our agent for free demonstration.

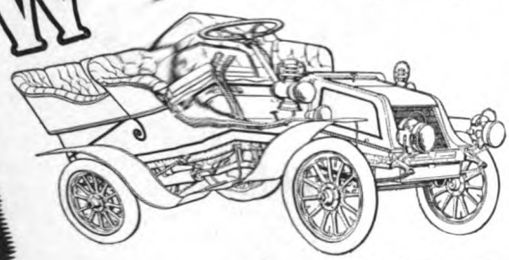
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Members Asso. Lic. Automobile Mfrs. SPRINGFIELD, MA

SELLING AGENCIES IN ALL PRINCIPAL CITIES.

WINTON



Completely Equipped, $2500;
Without Top, $2300;
f.o.b. Cleveland.

A PHYSICIAN SPEAKS.

Dr. W. W. Grube, editor of the *American Medical Compend*, says:

"I have had my 1904 WINTON four months and have had no trouble whatsoever. It has never failed to start or stop when I desired it. I think it is the best car in Toledo and am getting my friends to think so, too."

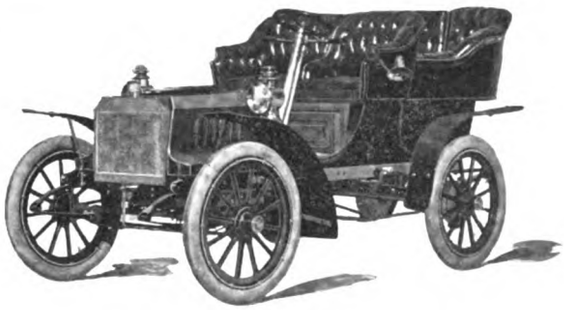
Absolute reliability is a WINTON characteristic.

THE WINTON MOTOR CARRIAGE CO.,

Member A. L. A. M.,

CLEVELAND, O., U. S. A.

New York. Boston. Philadelphia. Chicago. London.



THE

AUTOCAR

The Only Automobile Built and Sold on a Commercial Basis : :

Four Passenger, $1700. Runabout, $9(

Send for Booklet

THE AUTOCAR COMPANY, Ardmore, Pa.

Member A. L. A. M,

A good name is better than Promises.

THE FORD



has a reputation for reliability, second to no motor car in the world. For the professional or the business man who needs a machine for every day use, THE FORD stands promi nent as "The Car of Satisfaction." Verified facts are better than "claims."

10 H. P. Double opposed horizontal motor, cylinder head and water jacket cast in one piece (no packed joints.)

Planetary transmission in oiltight dust proof case.

The perfected construction of the FORD is the result of 15 years actual experience in building gasolene automobiles. DON'T EXPERIMENT—JUST BUY A FORD.

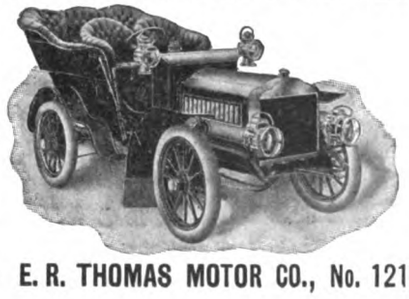
Full particulars and catalogue for the asking.

FORD MOTOR CO., Detroit, Mich.

ENTIRE OUTPUT

1904 THOMAS FLYERS SO

NO CAR HAS BETTER REPUTATION.



The 1905 "FLYE will shortly be announced.

GET IN LINE IF INTERE

RIDE IN A "THOM OR TAKE "THOMAS" DU

E. R. THOMAS MOTOR CO., No. 1210 Niagara St., Buffalo,

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IF THE RIM

LESSONS OF 1904

are taken to heart

"SWEDOH"
Spring Steel Rims

are likely to be the general equipment of all good machines in 1905.

"SWEDOH" SPRING STEEL RIMS have conclusively demonstrated their superiority by the severest tests in actual service, giving results unattainable with rims made of ordinary stock.
"SWEDOH" SPRING STEEL RIMS are made true and stay true.
True as "SWEDOH" steel is axiomatic.

THE AMERICAN TUBE & STAMPING CO.,
Bridgeport, Conn.

We own and operate our steel billet-making and hot and cold rolling mills and stamping works.



Your
SPECIFICATIONS
for
FORGINGS
should reach us promptly to insure
Seasonable Deliveries.

ARE YOU READY?
WE ARE.

THE BILLINGS & SPENCER CO., Hartford, Conn., U. S. A.
Makers of
Drop Forgings of Every Description.



MY DAD SAYS
I CAN HAVE
AN AUTO
WITH
MORGAN
&
WRIGHT
TIRES ON
WHEN I
GET
BIGGER

Reproduction of above picture in nine colors sent to auto owners on request.

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CHICAGO.

New York Dayton Detroit
St. Louis San Francisco

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THE NEW G & J THREAD FABRIC TIRE

THE FASTEST TIRE IN THE WORLD.
A REVELATION IN TIRE CONSTRUCTION.

The FORD RACER at Poughkeepsie makes a new WORLD'S RECORD for light weight cars— time 1 min. 3-5 sec. for the mile.

G & J

G & J TIRE CO.

Main Office and Factory,

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VEEDER ODOMETERS

are supplied as part of the regular equipment on the

- KNOX
- STEVENS-DURYEA
- PIERCE
- OLDSMOBILE
- APPERSON BROS
- NATIONAL
- BAKER
- BUFFALO ELECTRIC
- GLIDE

"It's Nice to Know How Far you Go."

THE VEEDER MFG. CO., - Hartford, Conn.

Makers of Cyclometers, Odometers, Techometers, Counters and Fine Castings.

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We Do Not Build Racing Machines

BUT

At Del Monte, California, on August 26th and 27th. a regular stock

Rambler

Won the 5-mile race for light touring cars in 8:16¾.

Won the Australian pursuit race for cars costing $2500 or less in 8¾ miles; time, 17:49.

Won the 5-mile race for cars costing $2500 or less, in 6:15¾.

Won the 5-mile race for cars rated at 16 horse power or less, in 6:01.

Won the hill-climbing contest for cars costing between $1000 and $2500, on a course 1⅝ miles long, with grades from 2 to 18 per cent., in 3:04.

Rambler

machines entered in eight races and received

Five First and Two Second Prizes.

SUMMARY:

Five miles, for light touring cars:

H. COUSINS,	RAMBLER,	FIRST
Cuyler Lee,	Cadillac,	Second

Time, 8:16¾.

Australian Pursuit Race, for cars costing $2,500 or less:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. Grothe,	White,	Second
W. K. Cowan,	RAMBLER,	Third

Distance, 8¾ miles.
Time, 17:49.

Hill climbing contest for cars costing from $1,000 to $2,500:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. K. Cowan,	RAMBLER,	Second
W. Grothe,	White,	Third

Distance, 1⅝ miles.
Grade, 2 to 18 per cent.
Time, 3:04.

Five miles, for cars costing $2,500 or less:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. Grothe,	White,	Second
W. K. Cowan,	RAMBLER,	Third
E. E. Russel,	Thomas,	Fourth

Time, 6:15¾.

Five-mile race for cars not over 16 horsepower:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. K. Cowan,	RAMBLER,	Second

Time, 6:01..

Hill climbing contest for cars costing from $2,000 to $4,000:

			Time.
Bert Dingley,	Pope-Toledo,	FIRST	2:43
W. E. SAUNDERS,	RAMBLER,	Second	2:47⅘
H. M. Chambers,	Great Arrow,	Third	3:25⅘
W. K. Cowan,	RAMBLER,	Fourth	3:35

Distance, 1⅝ miles.
Grade, 2 to 18 per cent.

Why not write for our illustrated motor book; it explains why the

Rambler

excels the high-price cars; it is an American machine, not a copy, and can hold its own in any company.

"Our Little History" is entertaining; it is also free for the asking.

THOMAS B. JEFFERY & COMPANY,

BRANCH HOUSES: { BOSTON, 145 Columbus Avenue. CHICAGO, 302-304 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, September 29, 1904. No. 1

TO REDUCE MAINTENANCE

License Association to Grapple the Subject—Far-Reaching Plans to be Considered Next Week.

What should prove one of the most interesting and important meetings yet held by the Association of Licensed Automobile Manufacturers is that fixed for Friday of next week, 7th inst. It is then proposed to at least inaugurate the shaping of a service that will prove of far reaching benefit, not less to the trade than to the individual owners of cars—the reduction of maintenance costs.

This is really the burning subject of the hour. General Manager Day has applied himself to it earnestly, and it has occupied the consideration of nearly all the recent sessions of the organization and of many unofficial conversations. The solution is not easy, but to assist it it is proposed to form at the meeting on the 7th a mechanical branch of the association, consisting of the superintendents and engineers of the various factories represented by the membership. All of these have been invited to attend.

The idea that seems of greatest promise is the standardizing and making interchangeable of certain parts of the various cars, thus reducing experiment and simplifying construction. The tire question also enters largely into the matter, but on this point no definite idea prevails; it is believed that discussion may evolve one.

If the mechanical branch is organized, it is proposed that those composing it shall immediately concentrate their efforts on:

First—Reducing the cost per vehicle mile to a lower point than is possible with any other present means of transportation.

Second—A thorough study of the tire question.

Third—The standardizing of parts within the range of possibilities and making as many parts and fittings interchangeable as possible.

The meeting will be held in conjunction with a dinner at the Central Park Casino.

In the morning, if the weather is favorable, those who attend—and between seventy and one hundred are expected—will be driven probably to the Ardsley Club house, at Ardsley-on-the-Hudson, where luncheon will be served. After luncheon the run will continue across country via White Plains to Travers Island, where the courtesies of the New York Athletic Club will be extended. It is hoped to have cars of each manufacturer in the run, and that opportunities to ride in as many of them as time will permit will be accorded to all. This programme, which includes some of the best roads and most picturesque scenery—doubly beautiful at this season of red and gold foliage—should certainly prove an attraction in itself, and with the Vanderbilt Cup race scheduled for the following day, the combination of important business and entertainment should serve to make the meeting a record breaker in point of interest and attendance.

Plans for Next Year's Yales.

At the annual meeting of the Consolidated Mfg. Co., which took place at Toledo, Ohio, last week, the old officers were re-elected, as follows: E. T. Breckenridge, president; Ezra E. Kirk, vice-president; A. W. Coulter, secretary, and J. B. R. Ransom, treasurer. These officers, with E. W. Tolerton, constitute the board of directors.

It was decided at the meeting to add to the present properties of the company the old plant of the Yost Mfg. Co., 35,000 square feet of manufacturing room. The old Yost structure will be devoted to the building of an entirely new touring car, which the company has decided to put on the market for next season's business.

The company will build 1,000 of the new cars, which will be called the Yale Junior. Besides the Yale Junior, the Consolidated company proposes to put out a large four cylinder 24 horsepower car.

Will Discuss Freight Rates.

On October 4, the day preceding the executive meeting in New York, a special committee of the N. A. A. M. will meet the classification committee of the railroad trunk lines in an effort to gain some relief from the heavy rates that now apply to automobiles. The association has been working to this end for some time, and is well fortified with facts and figures.

G & J CHARGES INFRINGEMENT

Long Threatened Action Against Michelin is Finally Instituted—Patents That are Involved.

Lightning that has long threatened struck on Thursday last when the G & J Tire Co. instituted proceedings against the United States Agency, Michelin Tire Co., a corporation of New York City.

The suit, of course, charges infringement of the G & J patents, in that the defendant "has sold and used and is now selling and using, and has caused and is now causing to be sold and used vehicle wheels and tires embodying in cojoint use an operation the several improvements or inventions described and claimed without the license or consent and against the will" of the plaintiff.

A permanent injunction and an accounting is prayed for.

The complaint, which was filed in the United States Circuit Court for the Southern District of New York, discloses several matters of interest that are not of general knowledge, the wide range of the G & J patents, for instance. These are as follows:

Thomas B. Jeffery, No. 454,115, of June 16, 1891; Thomas B. Jeffery, No. 466,565, of January 5, 1892; Thomas B. Jeffery, No. 466,789, of January 12, 1892; William Golding (Manchester, England), No. 493,160, March 7, 1893; Thomas B. Jeffery, No. 523,314, July 17, 1894, and Thomas B. Jeffery, No. 558,956, April 28, 1896, all of which were duly assigned to the G & J Tire Co.

As "indicating the character of the acquiescence accorded by the public," the plaintiff cites the fact that "every manufacturer of automobile tires of the G & J type in the United States is operating under licenses granted by your orator." The licensees are as follows: The B. F. Goodrich Co., the Hartford Rubber Works Co., Morgan & Wright, Inc.; India Rubber Co., Diamond Rubber Co., Goodyear Tire & Rubber Co., International Automobile & Vehicle Tire Co., and the Fisk Rubber Co. In addition, the Continental Caoutchouc Co., Hanover, Germany, has a license to export tires into this country.

Ernest Hopkinson appears as counsel for the plaintiff.

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TIRE PATENTS EXPIRE

British Monopoly Ended and the Kingdom Now an Open Market—Developments Promised.

After October 21 Great Britain will be an open market for the detachable types of tires. It is a half open market now. The British patents on the Dunlop tire expired by limitation on September 16, while the Bartlett patents on the Clincher tire will come to a like end on October 21. The monopoly which has held the British trade and public in its grasp for fourteen years will, therefore, in a little more than three weeks, pass away forever.

The patents referred to are those granted to C. K. Welch, who has long been identified with the Dunlop Tire Co., on September 16, 1890, on a wired-on tire, and to W. E. Bartlett, who was similarly connected with the North British Rubber Co., on October 21, 1890, on a tire of the beaded edge type. These two types have had a virtual monopoly of the British trade. In the case of the Dunlop colossal fortunes were made out of the trading profits of the company. From a humble beginning with six hands and a few thousand dollars of capital, it grew until there are at present four thousand employes, while the capital is $20,000,000. The Bartlett tire, which a few years ago was acquired by the Dunlop company, has been much less profitable. It has always played second fiddle to the Dunlop, and a decade ago was engaged in a life and death struggle with the G. & J. tire over the question of priority. It secured the victory after carrying the fight to the British House of Lords, and by so doing drove the G. & J. tire out of Great Britain. In this country, however, an equally sweeping victory was won by the G. & J. tire. The Dunlop patents in this country do not expire until 1909.

With the throwing open of the British market is expected to come a reduction in the tire prices, which have always been maintained at an artificial level, as well as tremendously increased competition. The makers of the Continental tire, in Germany, and the Michelin tire, in France, are already prepared to supply competing tires, while the host of British rubber concerns, which have with difficulty been held in check during the life of the patents, will make equally strenuous efforts to cut into the Dunlop trade. A reduction in price has already been made by the Dunlop company.

In commemoration of the death of the Welch patent the Dunlop Tire Co. tendered a dinner at the Hotel Cecil, London, on September 16, to some four hundred of its friends, customers and competitors. One of the speakers likened the function to an Irish wake, but predicted that the spirit, typified by the organizer and former manager of the company, Harvey du Cros, would never depart.

As the hands of the clock pointed to midnight, the hour at which the grant expired, Manager du Cros of the Dunlop company applied a lighted match to the official documents relating to the Welch patent, which had been placed on a raised table in front of his chair. The orchestra played Chopin's Funeral March, and as the patent specifications were being reduced to ashes the chairman read the elegy of the Welch patent.

Salesman Sues Illsley for Slander.

Asking $10,000 damages for alleged slander, James R. Bradford, an automobile salesman, brought suit in the Chicago Superior Court last week against Frank P. Illsley, the well known Chicago dealer.

Bradford was formerly in the employ of Illsley, but left the latter and went to work for a rival company. This action is claimed to have started the trouble, and Illsley is said to have circulated the report that Bradford while in his employ had given his present employers a list of Illsley's prospective customers. Illsley is also accused of having said that Bradford had used an automobile placed in the garage for repair. These statements attributed to the automobile manager have injured Bradford's business reputation, he asserts, and have placed him in a bad light with his present employers.

The Bankers Invade Detroit.

What might not inaptly be termed the "Bankers' Convention" was held in Detroit last week, when Arthur Banker, George Banker, A. C. Banker, of Chicago, and C. G. Wridgway, of Banker Bros., New York, were all present. Their visit in force gave rise to all sorts of conjecture, it being whispered that their object was to take over the entire output of one of the Detroit factories. To all questioning, however, the answer that they were merely looking around was the only one vouchsafed.

Weber to Again Expand.

Orlando F. Weber, whose success with the Pope-Toledo cars in Chicago has been little short of phenomenal, is still expanding, being now figuring on the erection of a large building in a choice location on Michigan avenue. The store will have a frontage of 70 feet, be 171 feet deep and two stories high. Mr. Weber has just added the Waverly, Pope-Hartford and Pope-Tribune lines.

Will Make Crowns in Detroit.

The Detroit Auto Vehicle Co., the most promising of Detroit's newer concerns, have absorbed the Detroit Novelty Machine Works and are this week beginning operations in earnest. They will market a four cylinder car to be called the Crown; also a patented spring tire of the same title.

Schug Adds Spark Plugs.

The Schug Electric Mfg. Co., Detroit, are adding to their productions a complete line of spark plugs of all standard sizes and threads.

SIX JOBBERS SUED

Old Patent on Tips for Gas Lamps is Brought to Bear—Other Suits Threatened.

There was a flare up in lava tips for acetylene gas lamps last week. Six New York jobbers found themselves faced with suits, in consequence of litigation waged over the validity of a patent granted on a burner of the type used almost universally on acetylene lamps for automobile and other lighting systems.

The trouble began almost a year ago, when, in the United States Circuit Court of Appeals, an interlocutory decree of the United States Circuit Court for the Northern District of New York, which had been appealed from, was affirmed. The complainant in the case was Moritz Kirchberger et al., who are the representatives in this country of J. Von Schwarz, of Nuremberg, Germany, who, in turn, is the owner of patent No. 589,342, granted on August 31, 1897, to E. J. Dolan, on acetylene gas burners. Kirchberger & Co. import and sell these burners; and upon securing this affirmation they were able to make an arrangement with the State Line Mfg. Co., of Chattanooga, Tenn., under which name D. M. Steward, one of the biggest makers of burners in this country, operates, whereby the Interstate company would take out a license from Kirchberger & Co., and pay them royalty on all burners made by them, the Interstate company.

Upon the conclusion of this agreement the Interstate company raised the gross price of their burners by nearly 300 per cent. This increase, however, figures out at only a few cents per burner.

The raise was acquiesced in by some lamp makers and jobbers, but the majority of them stood out and have since been purchasing their tips from other makers not licensed by Kirchberger & Co. The latter then, in order to bring these alleged infringing users to terms, instituted suits against six New York jobbers, viz., A. H. Funke, E. J. Willis, Emil Grossman, New York Sporting Goods Co., C. E. Miller and the Acetylene Co. The cases came up in the United States Circuit Court in this city last week and were adjourned.

The Von Schwarz patent is claimed to cover all burners from which is projected a small cylinder of acetylene gas, surrounded with an envelope of air, or a burner having outlets inclined toward each other, from which jets of acetylene gas surrounded with an envelope of air emerge. As practically all burners used in acetylene lamps are constructed on this principle, including both the fishtail and the straight flame styles, the sweeping nature of the Von Schwarz claims will be seen.

A representative of Kirchberger & Co. stated to a Motor World man last week that the suits against the New York jobbers were only the first step in a movement to stop the use of all lava tips not manufactured by them or their licensees. Similar proceedings would, he intimated, be commenced against jobbers in other cities.

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LEMP LOSES THE FLUE

Patent Commissioner Reverses Decision in Long Pending Case and Awards Priority to Mudge

An old and much discussed device, to wit, the flue construction used on steam automobiles, came in for an airing before the Commissioner of Patents at Washington recently, and it is reported in the current Patent Gazette. The device in question is covered by a patent granted to Richard C. Mudge, September 18, 1900, No. 658,114, and for which Hermann Lemp had filed an application on July 27, 1901, No. 69,904.

The matter came up on an appeal by Mudge from a decision of the Examiners-in-Chief awarding priority of invention to Lemp as to the following issue:

1. The combination with a carriage, of a steam boiler carried thereby and having a burner for heating it, and a flue for disposing of the products of combustion from the burner, said flue having substantially horizontal divergent branches, which are provided with outlets to the atmosphere and are arranged on either side of that portion of the flue which connects with the flues or heating passages of the boiler, said branches together forming a through passage for disposing of atmospheric currents which might otherwise reverse the normal draft of the burner.

2. The combination with a carriage body, of a steam boiler carried thereby and having a burner for heating it, and a flue for disposing of the products of combustion from the burner, said flue having substantially horizontal divergent branches extending transversely of the carriage body and terminating in outlets to the atmosphere which coincide substantially with the planes of the side walls of the carriage body, said branches being arranged on either side of that portion of the flue which connects with the flues or heating passages of the boiler, and together forming a through passage for disposing of atmospheric currents which might otherwise reverse the normal draft of the burner.

3. The combination with a carriage, of a steam boiler carried thereby and having a burner for heating it, and a substantially horizontal flue at the top of the boiler for disposing of the products of combustion from the burner, said flue having a middle or enlarged part immediately covering the boiler and a transverse part disposed to the rear of said middle or enlarged part and consisting of divergent branches having outlets to the atmosphere, and together forming a through passage for disposing of atmospheric currents which might otherwise reverse the normal draft of the burner.

It is held that "where it is established that a certain device was made and used to some extent, but it appears that the device was discarded and thrown into the scrap heap and no similar device was again used, but that a new one quite different in construction was made and used and then thrown into the scrap, and no testimony is given as to the successful operation of either of the devices.

Holding to this opinion, the Commissioner says:

"I cannot agree with the Examiners-in-Chief in their opinion that Lemp has established beyond a reasonable doubt that the devices of April and August, 1899, were reductions to practice. On the contrary, Lemp's actions, considered in the light of his testimony and that of his witness, Fisher, clearly show that his devices were not successful in their operation. They cannot, therefore, be given the effect of a reduction of the invention to practice.

"The decision of the Examiners-in-Chief is reversed, and priority of invention is awarded to Mudge."

The Week's Incorporations.

Milwaukee, Wis.—The Milwaukee Motor Co., under Wisconsin laws, with $25,000 capital. Corporators—F. L. Ford, Edgar E. Warner and A. W. Warner.

Danville, Ill—Kelley-Bridgett Co., under Illinois laws, with $5,000 capital; to manufacture automobiles. Corporators—E. J. Kelley, W. M. Bridgett and G. T. Buckingham.

Chicago, Ill.—Mason-Harvey Co., under Illinois' laws, with $2,500 capital; to manufacture and repair automobiles. Corporators—W. W. Harvey, W. R. Mason and A. A. Hedges.

Springfield, Ohio—The Laminated Automobile Frame Co., under Ohio laws, with $10,000 capital. Corporators—Orrin L. Parsons, C. C. Bramwell, Horace C. Keifer, W. W. Keifer and George C. Lynch.

Syracuse, N. Y.—The Ames-Pierce Automobile Co., under New York laws, with $1,000 capital; to manufacture and deal in motors, engines, etc. Corporators—C. L. Ames, H. C. Pierce and G. H. Dennison, Syracuse.

Washington, D. C.—The Eleanor Automobile Co., under District of Columbia's laws, with $300,000 capital. Incorporators: A. von McCallister, B. A. Horst, Robert McElroy, Messrs. Frere, McLaughlin, L. T. Sverett and Ochsenreiter.

Toledo, Ohio.—The Indiana Scale & Truck Co., under Ohio laws, with $100,000 capital; to manufacture trucks, scales, automobiles, bicycles and other vehicles. Corporators—Samuel Snell, R. B. Dakin, G. F. Miller, sr., John Renner and R. Fuller.

Plainfield, N. J.—Hyne Motor Co., under New Jersey laws, with $25,000 capital, to manufacture and deal in motor vehicles. Incorporators: Harrison Coddington, North Plainfield; Charles P. Fulmer, Plainfield; Charles F. Hyne, North Plainfield; William B. Harsel, Plainfield.

Aultman in Receiver's Hands.

The big Aultman Co., of Canton, Ohio, which went into the hands of a receiver last week, had been preparing for a year or more to embark in the automobile business; several experimental cars had been built, but nothing came of them. It is estimated that the concern's liabilities will reach $1,500,000.

Addition to Denver's Trade.

The Mathewson Automobile Co. has been formed at Denver, Col., with E. Linn Mathewson as president and Fred. W. Bailey as secretary and treasurer. Quarters have been secured at Nos. 1,420 and 1,422 Court Place. Mr. Mathewson was formerly manager for George E. Hannan.

REFUSED 35c. SETTLEMENT

Columbus's Creditors Wave it Aside and Promptly File Bankruptcy Petition—Liabilities, $70,000.

The embarrassment of the Columbus Motor Vehicle Co., Columbus, Ohio, makers of the Dumont car, which has been a matter of common comment for a month or more, and which was duly noted by the Motor World, reached a climax last week.

Following a meeting of creditors called to consider an offer of settlement of 35 cents on the dollar, and which failed to agree on an acceptance, a petition in bankruptcy was filed by the Interstate Foundry Co., the Hartford Rubber Works Co., Alexander T. Brown and William C. Lipe, as administrators of the estate of Charles E. Lipe, deceased, partners, trading as the Brown-Lipe Gear Co.

George Hedges, attorney for the company, is credited with the statement that the concern's liabilities are about $70,000, but that they are protected by ample assets, and that the concern was not insolvent; that of the $70,000 indebtedness about $40,000 was money borrowed locally, all of which was protected amply by personal security, the remainder of the indebtedness being due chiefly to outside creditors for material.

New Concern's New Top.

A canopy weighing, complete, 55 pounds, is being marketed by the American Buggy Top Co., Jackson, Mich. Although comparatively new, this concern has been markedly successful. It has already booked the 1905 orders of the Ford, Haynes-Apperson and Northern companies.

Office in Ohio; Plant in Indiana.

The Indiana Scale & Truck Co., the incorporation of which with $100,000 capital is noted elsewhere, has purchased a plant at Bluffton, Ind., and will operate it from the main office at Toledo. The plant is said to be completely equipped.

Air-Cooled Car from Brockton.

The American Motor Co., Brockton, Mass., is working on a two cylinder air cooled car which will be marketed at about $500. Heretofore the concern has confined itself to the manufacture of the Marsh motor bicycles.

Will Travel for Olds.

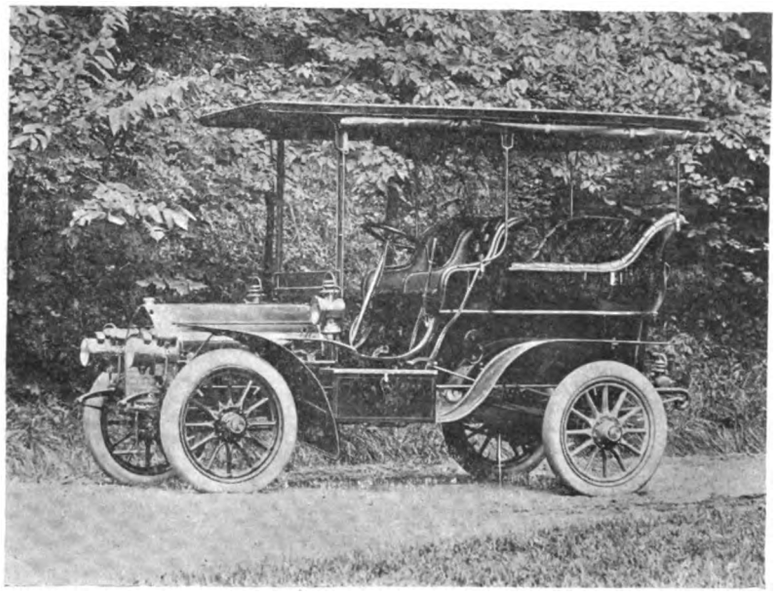
C. F. Gilmour, of Buffalo, and C. H. Larson, of Chicago, have been added to the travelling staff of the Olds Motor Works. The former will cover the East and the latter Western territory.

New Tennant Tire Coming.

The Tennant Auto-Tire Co., Springfield, Ohio, have almost ready for marketing an addition to their line of puncture proof tires. A new fastening is one of its striking features.

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The Numbering Fallacy Exposed.

Of all the miserable and despotic laws which single out for regulation a particular class of private vehicle, that which governs the use of motor vehicles in Massachusetts is without a peer. It places in the hands of the Massachusetts Highway Commission power that is equalled only by that possessed by the Czar of all Russia. It is an offence to loan a car; it is an offence to sell one without reporting the sale, an offence to permit one to remain standing unlocked. The makers and dealers each pay an extra and special tax for the privilege of selling the same automobile, and the purchaser in turn is similarly mulcted. Despite the fact, a particular road in the State may be closed to automobilists, and their right to use the common roads may be wholly revoked at any time within the pleasure of the Highway Commission, while ever must they travel fortified with the tag and bit of paper that guarantees the unmolested exercise of a right that has been made a privilege.

The foundation of the entire law is, of course, the system of registration and numbering which legislators in their infinite wisdom conceive to be the remedy for all evils. From the beginning, the Motor World has inveighed against the injustice of double and triple taxation and the un-American principle of revoking the inherent right to use the public highways, and has as steadfastly maintained that the numbering system is at once a farce and a delusion. Instances without number have accumulated to bear out our assertions, but it has remained for not less than the Massachusetts Highway Commission itself to deliver to the system the worst blow it ever has received.

In the case of L. P. Sims, of Worcester, whose car was arrested—Mr. Sims himself proved that he was at the time in St. Louis, but by a screamingly funny travesty on justice he is, nevertheless, held responsible—for violation of the speed limits fixed by the precious law. But the august chairman of the commission originally appointed to lay out and inspect and improve the public roads, and suddenly clothed with judicial power, ruled also that it is incumbent on constables and their ilk to identify offending cars by more than their registration numbers—in other words, they must be able to describe them with at least reasonable fulness.

Mr. Sims's right to use the common roads, for the maintenance of which he is doubly taxed, is therefore at least temporarily secure.

But the precedent established by the Massachusetts Highway Commission is beyond price. It is more just than the law itself. It takes cognizance of the fact that even Massachusetts constables are human, and may, therefore, err.

But it is a ruling that shatters the whole numbering system as if it were but a house of cards, which is really all it amounts to. The fallacy of it all is laid so bare that even a blind man may feel it. The number is supposed to be of value chiefly in the apprehension and identification of a fleeing offender. If it is necessary to further identify the vehicle, how many men, if serving on a jury and having regard for the duplication of numbers by many States and cities and for the fallability of man, will convict a man charged with an offence under such circumstances? And, as in the case of the offender who does not flee and who is apprehended, the number of his vehicle cuts no figure in the evidence, of what earthly value is it, save as a basis for the extortion of an extra tax ?

The Massachusetts decision holds hope for all men who use motor vehicles, wherever they may use them. It should be made the most of wherever such laws exist or are proposed.

Have the Massachusetts motorists sufficient backbone to use the bomb that has been placed in their hands, and, by shattering the despotic law, obtain those equal rights and that exact justice for which their forefathers fought and died?

The Widths of Bodies.

For some years automobile bodies have been getting larger, until present-day cars are out of all proportion to other vehicles. In spite of the fact that wheel bases have been greatly extended, the bodies of most touring cars overhang in the rear, as well as bulge out at the sides, until the room that once sufficed for them has become quite inadequate.

The matter is attracting attention in widely separated quarters. A week or two ago Police Commissioner McAdoo of this city referred to the matter, and said that he was considering the advisability of asking the Board of Aldermen to limit the size of vehicles. His remarks were called forth by the huge sight-seeing 'buses which ply the streets in this and other cities, and had no reference to ordinary touring cars. Yet some of the latter undoubtedly are transgressors in this respect, as they add to the difficulty—already very great—of handling traffic in the heavily congested centres, as well as of passing other vehicles on the narrow roads that are frequently encountered in the country.

The second note of protest comes from Paris, where, it is said, a radical modification in the body work of the new automobiles is in progress. The once popular pattern known as the "King of the Belgians" is said to be altogether out of favor. It is found that this heavy swaying coach work protruding over the wheels lessens stability and is the cause of many accidents. In the future pattern all bulging will be discarded and the body of the carriage will be well within the wheels.

This is a step in the right direction. There will be some sacrifice of comfort and convenience as a consequence of this contraction of space, but, as automobile bodies will even

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then be larger than those of horse-drawn ones, there is no reason why the ingenuity of the coach builder should not be exercised to produce something equally as roomy and luxurious, yet without increasing the width.

The Awakening Abroad.

One of the most interesting signs of the times is the increased, or renewed, interest which France and Great Britain are taking in the low-priced car. Every indication points to its receiving, if not the lion's share of attention in 1905, at least considerably more than it has in the past. This is the more noteworthy as it comes at a time when the trend in this country is just the other way—toward bigger and more costly cars.

A few years ago France was in the throes of the voiturette craze. The light and cheap car occupied the centre of the stage, and, in its innumerable and diverse types, filled the streets of Paris and other French towns. They did not give entire satisfaction, however, their comparative crudeness and unreliability operating against them. Consequently they fell into a disfavor, which the coincident marked improvement in the big cars helped to bring about. In Great Britain a somewhat similar experience occurred although there the small car always had a stronger hold on the trade and public than in France.

In both countries the belief is gaining ground that the future of the industry lies in the development of the smaller and cheaper types of cars. This belief found its expression in the English light car trials, which were recently held in place of the open trials for all types of cars held in previous years.

Limited to cars listing at from $650 to $1,000, these trials proved to be a great success, both in calling attention to the number of really excellent cars sold at these figures and in demonstrating their efficiency and reliability. Apparently, there existed a considerable demand for such cars, along with a marked lack of confidence in the ones available. If the trials did nothing else, they dispelled this erroneous impression and produced convincing evidence that people of moderate means, whose views were reasonable, could obtain for $1,000 or less vehicles capable of rendering good service under the most trying conditions. As the larger cars had already demonstrated their ability to cope with the more exacting demands made upon them, the light car trials rounded out the score and gave buyers assurance that the time for hesitation was past.

In both countries the feeling is strong that the output of big cars has about reached the limit of extension. All that can reasonably be expected is the maintenance of its present volume of sales. The number of people who can pay $5,000 or upward for a car is limited, and, while many such have still to become motorists, the proportion already supplied is very large.

On the other hand, the number of possible purchasers of cheap cars is almost inexhaustible. Where dozens or scores of high-priced cars are disposed of with increasing difficulty, hundreds or even thousands of cheap ones will find ready sale, once the public believes that entirely satisfactory cars are obtainable. As long as there is doubt on this point, buyers will hold off in the hope of obtaining vastly improved cars a little later.

Trickery in Second-Hand Sales.

Few trades so readily lend themselves to tricks as those which deal with second hand wares or which prosecute sales on commission bases. It is therefore hardly to be expected that the automobile business will prove immune. There is, however, one practice that is in vogue in certain houses that dispose of old cars on a commission basis that passes the limits of "trade tricks" and approaches, if it does not actually constitute, a crime which should lodge its perpetrators behind the bars.

The "trick" is a very simple one. The man with the second hand car for sale leaves it with the commission man and names, say, $250 as the rock bottom price at which it may be sold. The commission man secures a customer, and, after the usual hectoring, disposes of the car at that figure—or better, if possible. The unscrupulous of the class are then not content merely to pocket the commission and the extra amount obtained, but, with the money already in hand, they telephone, telegraph or write the original owner of the car that they have a buyer in sight, but that he will give not more than, say, $225 for the property. These messages almost invariably wind up with the suggestive notification that an immediate decision is imperative. It is rare that this decison is unfavorable. Immediately it is received the check for $225, less commission, is forwarded. The commission sharper is thus $25 to the good. He probably terms it "finding money." The honest man will view it as a plain case of theft.

How general is the practice we have no means of knowing. We know to a certainty that it is pursued regularly by two concerns, at least one of which, while not usually permitting "pickings" to escape, is not popularly credited with descending to anything so closely akin to downright theft.

The moral is plain. The man with an old car to sell should either sell it himself or assure himself of the character of the man or concern into whose hands he intrusts its sale. In the case of a doubtful house, he should, to make sure that he is not being fleeced by such methods as those referred to, insist on seeing the sales slip or being supplied with the name and address of the purchaser—and then investigating the latter to preventing the "planting" of one to suit the occasion.

Simplicity of Control.

Simplicity of control is the sine qua non of nearly all designers and makers. A great improvement in this respect has taken place during recent years, and each fresh batch of motorists finds the problem a less difficult one to solve.

Opinions differ, however, as to the direction the efforts to obtain simplicity and at the same time retain efficiency of control should take. Practically all designers are agreed on the desirability of supplying a foot-operated brake, the application of which withdraws the gear or in some other manner disconnects the engine and the transmission gear. Among drivers it is felt, too, that the brake that is most used as well as most effective should be foot operated; but on some cars the contrary is the case, and the driver, should he be called on to stop suddenly, makes use of a hand-operated lever for the purpose, thus necessitating the removal of one hand from the steering wheel—a practice obviously dangerous at such time.

There is likewise a strong feeling that cars should be so constructed that the driver's hands need never be withdrawn from the steering wheel while running, except to make speed changes. The practice of operating the throttle and the sparking advance from the wheel originated abroad, and is now in pretty general use. It not only permits the driver to keep his hands on the wheel, but avoids the necessity of taking his eyes from the road; for a fleeting glance can be cast at the appliances on the wheel without really losing sight of the road.

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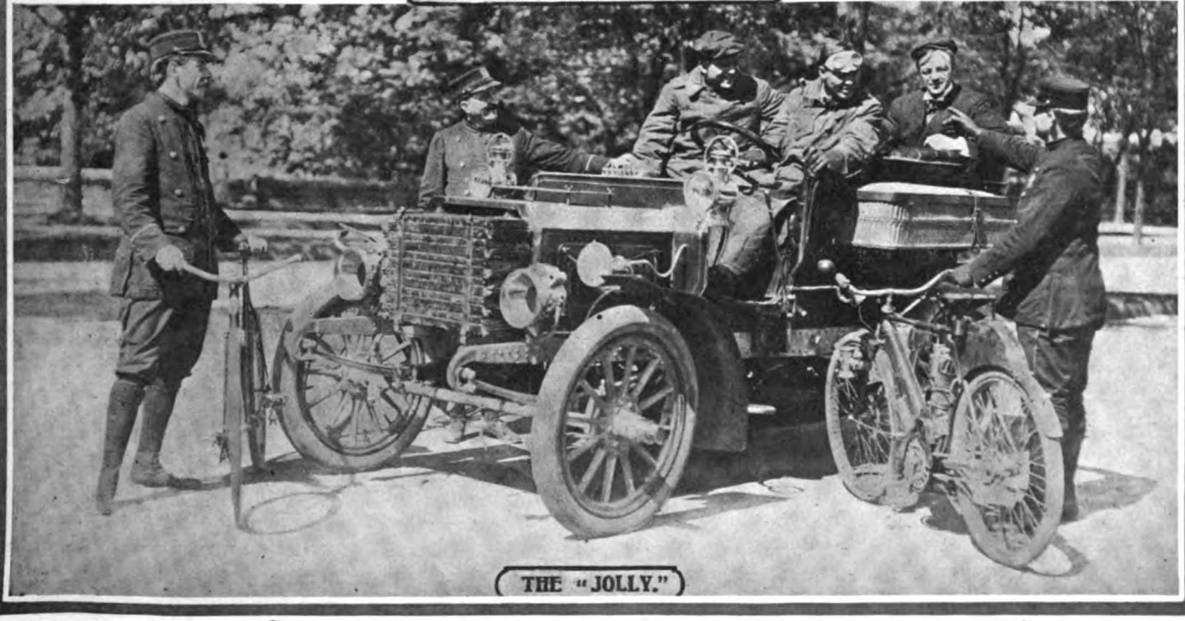
The Old, Old Story.



THE CHASE.



SURROUNDED—THE ARGUMENT.



THE "JOLLY."

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TRYING TO STOP CUP RACE

Long Island Motorphobes Fomenting Trouble—Checkmates Ready and Preparations Complete.

If they can possible encompass it, the People's Protective Association of Nassau County intends to interfere with the running of the Vanderbilt Cup race on October 8. Rumors of coming protests took shape on Wednesday, when the association sent a letter to the Board of Supervisors of Nassau County, containing the signatures of 188 residents, protesting against the board's action in closing the roads on the course during the running of the race. The right of the board to do this is denied, although the statutes of New York State expressly permit such action, and the letter ends with the threat to carry the matter to the courts unless the board rescinds its action.

Trouble from this quarter was not altogether unexpected by the American Automobile Association, under whose auspices the race is to be held. Measures have been taken to checkmate any move that is made. Chairman Pardington, of the A. A. A. racing board, when asked by a Motor World representative on Thursday morning what would be done if an injunction restraining the running of the race should be granted, said:

"Everything that human foresight can suggest has been done. We have engaged counsel and prepared affidavits for submission in case an injunction is granted, and shall at once ask that it be vacated. The only way they can give us serious trouble is to spring the injunction on us at the last minute—say the morning of the race. That would cause some delay, of course. But it is very doubtful whether they can do this. An injunction can be granted only by one of the three judges in this district, and unless some of the facts in the case are concealed when making the motion, I do not believe an injunction will be granted.

"As to a move against us next Tuesday, when the Board of Supervisors meets, we do not fear it at all. The board is with us to a man, and gave us the permission with the fullest knowledge of the circumstances of the case."

As the time for the running of the Vanderbilt cup race, viz., October 8, approaches, interest in this, America's first big road race, and almost the first legalized and regularly organized road speed contest, grows apace. There is now not the slightest doubt that it will be viewed by a huge concourse of spectators, and in view of this fact the most rigorous precautions will be taken to prevent accidents.

There has been a big rush for boxes and seats. There are eighty of the former at $50 each and 300 of the latter at $5 each. Of the former there have been reserved up to to-day sixty-seven and of the latter 225. Twenty-eight miles of the thirty-two-mile circuit are being given a double coating of oil, requiring 90,000 barrels, at a cost of $5,000 for the job. The grandstand receipts are to be devoted to this purpose.

To meet a deficit in the expenses of the race a subscription fund has been started. The subscribers thus far are: W. K. Vanderbilt, jr., $200; Mrs. W. K. Vanderbilt, jr., $100; Mrs. O. H. P. Belmont, $50; H. M. Swetland, $50; George Arents, $50; Long Island Automobile Club, $50.

Among those who have secured boxes are Mayor McClellan, Albert C. Bostwick, F. G. Bourne, M. J. Budlong, E. R. Thomas, H. L. Bowden, P. T. Collier, Clarence Postley, George Isham Scott, F. C. Havemeyer, H. C. Frick, W. Gould Brokaw, Howard Gould, O. H. P. Belmont, Colonel George Pope, Harlan W. Whipple, W. C. Temple, Windsor T. White, James H. Breese, George Arents, jr., Isidor Wormser, jr., Frank H. Croker, George Farrington, Mortimer L. Schiff, Sidney B. Bowman, R. E. Jarrige and Hollander & Tangeman. The executive committee of the N. A. A. M. will attend in a body, arrangements having been made by General Manager Miles.

To prevent speculation in seats and boxes not more than two seats or more than one box will be sold to an individual unless he is known to be a member of some club in the "Three A" affiliation and is vouched for by a member of the commission for 1904. These seats and boxes will all afford a commanding view of the start and finish, the occupants enjoying the benefit of the immediate announcement of times made each lap and of any occurrence along the route.

In a bulletin setting forth details of the preliminary arrangements, Chairman Pardington says:

"To prevent the troubles incident to reporting by telephone, which occurred during the Bennett Cup race in Germany, the committee has placed the arrangements of telephonic communication in the hands of the New York and New Jersey Telephone Company, which has assigned an engineer to work out the details. The timers are to have their own telephone system connecting the official stand with the timers, located at the two controls, one at Hicksville and the others at Hempstead.

"In addition to this elaborate system, the judges are to have a system for their own use, connecting the various points on the circuit, particularly at the four turns—Jericho, Plain Edge, Queens-Hempstead and Queens-Jericho. The judges and checkers at these points are to be provided with portable telephones, through which they will be enabled to instantly report to the judges and referee the passage of cars and any other matters which require official sanction or ruling.

"These systems will require about 500 miles of wire and a large number of telephone instruments especially adapted to meet the needs of the commission and officials. To guard against breakdowns four inspectors and repair men mounted on motor bicycles are to be located, one at each of the four turns.

"The course immediately in front of the grandstand and official pavilion is to be kept absolutely clear. No person but the starter and the two technical advisers will be allowed to approach any car before it starts. This precaution is taken to prevent the possibility of accident in the presence of occupants of the stand and boxes. To avoid confusion, only one car will be brought up to the tape at a time, which as soon as it shall have been sent away will be replaced by another, and so on, until the last one shall have departed. Upon the departure of the last starter, the space in front of the stand for a distance of about 400 feet will be kept entirely free of pedestrians. None but officials will be allowed to cross the course, and they only on preceding to one end or the other of the reserved space. This rule will be strictly enforced by building a fence, supplemented by deputy sheriffs vested with full authority to arrest.

"Spectators expecting to reach the stand after the start, at 6 a. m., must, if in cars or other vehicles, go from Jamaica via the Merrick Road, to Rockville Centre or Freeport, thence north to Hempstead, through the six-minute control at this point; thence to Garden City, Mineola, past fair grounds and thence to Westbury. The stand and boxes are within a mile of the railroad station at Westbury. A road runs close to the stand. Arrangement to park cars in a vacant lot near by are being completed.

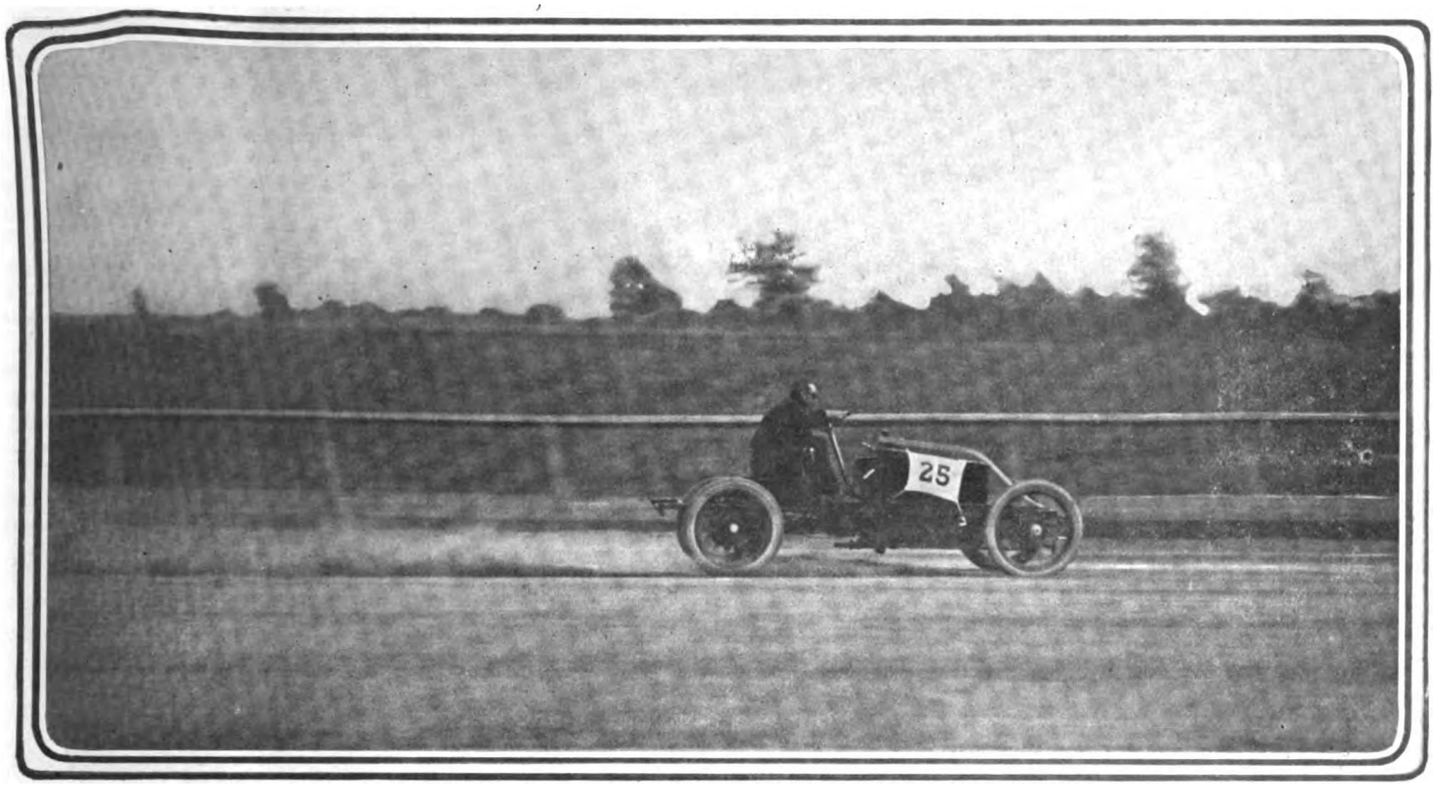
Another Thomas to Enter Racing Arena.

Dr. Harold E. Thomas, of Chicago, who this season has been driving one of the 16-horsepower four-cylinder gasolene Locomobiles, has been so highly impressed that he has placed with the Locomobile company an order for a 30-35 horsepower four-cylinder limousine car and a special racing machine of 90 nominal horsepower, to be specially built for him from designs of A. L. Riker. The latter will be the first gasolene racing machine to be built by the Locomobile company of America; will have four front vertical cylinders, and in general design will re machine to be built by t ehLocomobile Com The cost of this car will be $18,000, in racing trim. The Locomobile company state that the building of this costly racing car must not be construed into meaning that they will enter into the racing field, and claim that, whatever any of their customers may do with their cars, they will not take part in track races or long distance road races during the season of 1905.

Baron de Caters has thus early been chosen as one of the Mercedes team in the 1905 Bennett Cup race. He is also contemplating competing in the reliability trials to be held in India this fall.

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Mile-a-Minute Racing at the Empire City Meet.



JOSEPH TRACY AS HE APPEARED IN HIS RECORD BREAKING FLIGHT.

There are few big race meets nowadays that do not project into the limelight a new star. That at the Empire City track, Yonkers, N. Y., on Saturday, September 24, was no exception. It revealed in convincing fashion the superb skill possessed by Joseph Tracy, a veteran American driver, who is no novice in the racing game. But it remained for the Empire City meet to reveal him in his true colors, to stamp him as the peer of any of the drivers who have acquired fame in this or any other country. The wonderfully clever manner in which he handled W. G. Brokaw's Renault car at once impressed itself on the spectators. It was devoid of theatre tricks or plays to the grandstand; there was no contortioning of the body on the turns, no spreadeagle sweeps to the outside of the track on the straights, to be followed by swoops down on the pole at the turns; no posing before, during or after the race; no jerky driving, but just simple, steady going, that was a marvel of evenness and smoothness. It was just the sort of work to be expected from a plain man like "Joe" Tracy, who was as steady in his seat as a horseman of the plains, and as modest about it as any one could be. His scarlet sweater was the only obtrusive thing about him.

It was Joseph Tracy, too, who was responsible for one of the picturesque features of the meet. He had taken the new Royal racing car in hand and succeeded in Tracyizing it. The result was that when he appeared with the car in the first heat of the Great Empire Handicap he created a small sized sensation. The engine exhausted straight out through the side of the bonnet, and the smoke and the rattatoo of the expelled mixture suggested the discharge of a battery of machine guns. As it sped around the track the eye as well as the ear could follow its course. The car was too heavily handicapped to have the ghost of a show, but it gave a splendid performance that augurs well for its future success.

The versatility of Tracy was also shown in this race, when at the finish of the first heat he jumped from the Royal to the Renault and drove it into a place in the final heat.

The meet itself was, although robbed of much of its attraction in a competitive sense by the enforced absence of several of the heralded stellar attractions, one of the most successful and interesting held at the Empire track. A fine day, albeit somewhat marred by flurrying clouds, drew a record breaking crowd to the grounds. Secretary Reeves stated to a Motor World representative late in the afternoon that it was the largest gathering ever seen at an automobile meet in or near New York. The grandstand and the clubhouse were filled, while on the lawn behind the improvised safety "rail" stretched a few yards in the rear of the permanent rail were massed many hundreds more. Conservative estimates place the number of people at close to ten thousand. The outpouring of cars also surpassed all previous figures; parked on the lawns and under and behind the grandstand and in the vicinity of the clubhouse were 450 cars of all sorts and conditions. Filled with attractively gowned women and well dressed men—the typical and hideous automobile costume was less in evidence than usual—they were driven up the smooth, well kept entrance to the track and parked in constantly lengthening rows, while their occupants alighted and wended their way to clubhouse or grandstand. The former was the favorite gathering place of the fashionables, and between the races the scene there bore a resemblance to Fifth Avenue on a bright fall afternoon.

The meet was productive of nine world's records, one of such flights of speed as have marked the appearance of Oldfield and other space devourers on this same track in the past. This means there was good sport a-plenty, including the breaking of middleweight records from two to ten miles, and if the public's appetite for sensational performance was not gratified, it was dismissed in good humor and with pleasant recollections to furnish food for conversation. There were several keenly contested races, while the tidbit of the day, the ten-mile international race, furnished two interesting heats and a final in which two remarkably evenly matched cars—the Brokaw Renault and the Thomas Mercedes—struggled in fine style, one to hold and the other to cut down a slight lead. A too liberal system of start allotting spoiled the handicap race, its result being a foregone conclusion before the final was run.

The conduct of the meet was quite up to the Empire City track standard. Save for a tedious wait before the Great Empire Han-

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Views of the Racing at the Empire City Meet.

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dicap, occasioned by the cogitations and calculations of the handicapping committee while the cars were at the post, the events were run off with all possible expedition. The time honored experience with non-starting entrants was gone through with, but sufficient cars remained to fill all the events fairly well. The list of absentees included the Bowden 100 horsepower Mercedes and the Premier Comet, which were expected to divide stellar honors with the Thomas Mercedes, and Tod Sloane's 40 horsepower Decauville. The first named was disabled by the cracking of two of its cylinders early in the afternoon, just after covering a trial mile in 0:54. The Comet was put hors de combat by a broken shaft, while the energetic Sloane was halted by an unsympathetic cop while on his way to the track, charged with illegal speeding, and his car temporarily held in pawn. Sloane appeared at the track a trifle late and was obliged to content himself with a view of the contests from the grandstand. The speedy little Ford skeleton, driven by the famous Kulick, proved to have an off day. A run down battery was assigned as the cause of its first failure to equal expectations, and later it was withdrawn, as it was seen that it was not up to concert pitch.

The enjoyment of both spectators and contestants was much heightened by comparative freedom from the dust evil. Rain early Saturday morning had worked wonders, and a thorough wetting of the track at 11 o'clock further contributed to the desirable end. The result was that the small amount of dust raised by the speeding cars was swept away by the brisk breeze that blew all the afternoon, except on the first turn, where several nasty holes became steadily worse as the afternoon wore on, and here clouds of dust arose and were wafted in the direction of the clubhouse every time a car passed.

Robbed of much of its international flavor by the scratching of one of the American teams and the withdrawal of the other, the race for the International Cup had plenty of "ginger" interjected into it by the splendid contest resulting between the French and German cars—the Renault and the Mercedes. Although the former is rated at 30 and the latter at 60 horsepower, they proved to be a wonderfully even match. If the winner, the Renault, excelled at all, it was only by a shade, and for mile after mile the two tore around the track as if coupled by an invisible tow line, so little did the distance between them vary. The victory of the French car is due almost altogether to the fine driving of Tracy. This was made plain by watching the cars on the turns, and particularly on the bad first turn. Hawley, who drove the Thomas Mercedes, drove a la Oldfield—that is, he swept wide on the straights and drew in to the pole on approaching the turns. The bad turn seemed to bother him wofully. He failed to get close to the pole, and nearly always struck the holes and was badly jolted in consequence. In the earlier races he carried a mechanic, who performed that time-worn trick of projecting himself toward the pole on the turns, as if to hold the car down; but in the final heat Hawley came out alone. On the other hand, Tracy held the pole all the way around. He made his gains entirely on the turns, a fact plain to all who watched the two cars.

The first heat of the international race was between the two Italian Fiat cars. Paul Sartori, who will pilot the A. G. Vanderbilt car in the Vanderbilt Cup race next week, drove the car entered by Hollander & Tangerman, while E. A. Riotte performed a like duty for the car entered by E. K. Wallace. After two false starts, in both of which the Sartori car refused to start, they got away slowly in single file, with Riotte leading. The first mile occupied 1:20 1-5 in the running, the Riotte car taking the straights on the outside and closing in on the turns. On the third mile, while on the backstretch, the Sartori Fiat went to the front with a rush, and thereafter was never headed, winning by about an eighth of a mile.

The second and third heats were walkovers for the Thomas Mercedes and the Ford, they being the only cars left to contest for Germany and America, respectively.

The fourth heat was more numerously contested, Joseph Tracy, in the Brokaw Renault, and Felix Froger driving M. C. Hermann's 70 horsepower Panhard, appearing at the post. Froger was the typical Gaul, excitable and theatric. He waved his hand to a compatriot in the grandstand as he went down to the starting point, and treated the spectators to all sorts of pyrotechnics with his car—changing speeds, racing his engine, etc. After a false start, caused by Tracy coming to a stop just before reaching the tape, the two cars were sent off, and Tracy shot away into the lead at once, and at the mile was three hundred or four hundred yards to the good. Froger evidently recognized the futility of pursuit, for he quit on his second mile.

This left Tracy (Renault, France), Hawley (Mercedes, Germany), Riotte (Fiat, Italy) and Kulick (Ford, America) eligible to the final.



THE "WHITE" MASCOT AT EMPIRE CITY.

All of them appeared and were sent away in good shape, with Tracy leading. Almost immediately they strung out, Tracy gaining slightly on Hawley, with Kulick and Riotte in his rear. It soon became plain that the Ford was not behaving properly, and at two miles Kulick withdrew. Riotte was not in much better case, for he fell steadily behind, and at five miles was almost lapped by Tracy, who was about one hundred and fifty yards ahead of Hawley. At six miles Tracy lapped Riotte, who continued to fall, and at the finish was a lap and one-half to the bad. Meanwhile Tracy and Hawley were having a battle royal. Both cars were travelling at nearly the same pace, and the evenness of the running is shown by the time for each mile, as follows: One mile, 1:03 2-5; two miles, 2:02 3-5; three miles, 3:02; four miles, 4:01; five miles, 5:01; six miles, 6:01 2-5; seven miles, 7:01 3-5; eight miles, 8:02 1-5; nine miles, 9:02 1-5; ten miles, 10:01 2-5.

The fourth mile, 59 seconds, was the fastest of the race, with the second and ninth miles, 0:59 1-5, next; while the third mile took but one-fifth of a second more. With the exception of the first mile, these are all new records for middleweight cars. They displace, by a striking coincidence, the records made July 18 last on the same track and by the same Renault car, the latter, however, having then been driven by M. G. Bernin.

From the fifth mile on Hawley made desperate efforts to cut down Tracy's lead, and succeeded in crawling up a few yards. He was unable to make any considerable impression, however, and at the finish Tracy led by fully one-eighth of a mile.

"The indulgence of the audience is begged while the handicappers calculate the starts in the Great Empire Handicap," declaimed Announcer Peter Prunty previous to the running of that race, after it had become plain that there was a hitch somewhere. As the event proved, the spectators' indulgence was needed, not only for the delay, but for the spoiling of the race by injudicious start allotments. The most glaring offences were in the cases of the 24 horsepower Fiat and the 15 horsepower Buckmobile. The former, with 1 minute and 20 seconds start, and the latter with 4 minutes and 16 seconds (why the odd number of seconds was given is a mystery), won their respective heats with ease, and the Fiat, driven by Sartori, finished in the lead in the final by a good margin. A. S. Lee (24 horsepower Pope-Toledo), who started at the same time as Sartori, finished second, while the Buckmobile was third. Tracy (Renault) made a splendid effort to close up, but finished half a mile behind the winner. The first car sent off was the Buckmobile, which had almost completed a mile when the second group—the Fiat and Lee's and Soule's Pope-Toledos—were given the signal. Soule was shaken off, but Sartori and Lee had a desperate struggle for the entire distance. A grand race ensued down the straight on the last lap, but Sartori finally drew away and finished with a lead of about forty yards.

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The five-mile race for American touring cars was the closest contest of the day. It resulted in a hammer and tongs struggle from start to finish between Charles Soule (Pope-Toledo), and A. E. Morrison (Peerless). They were but a few lengths apart until the last mile, when Soule drew away and won by a scant thirty yards in a splendid finish.

Three cars faced the starter in the ten-mile race for the Knickerbocker Cup, i. e., Joseph Tracy (Renault), Frank Kulick (Ford) and H. R. Lounsbery, jr. (Meteor). Kulick and his Ford were looked to as metal worthy of Tracy's steel, but, as it transpired, the latter had a virtual walkover, and the spectators derived their chief enjoyment from watching Tracy's flawless handling of the Renault flyer. The latter took the lead at the start and drew slowly but steadily away, and at three miles had nearly one-quarter of a mile lead. Shortly after this Kulick dropped out, and as the Meteor had done so sooner the Renault was the only contestant left on the track. Had he known it, Tracy could easily have got among the records, as for several miles he was within a fraction of a second of them, but he repaired the omission later in the afternoon, when, in the international race, he made heavy cuts in them.

In convincing fashion Rodney Peeler (10 horsepower Autocar) won the five-mile race for the Yonkers Cup, open to cars costing $1,000 and less. R. M. Alexander (10 horsepower Pope-Hartford) finished second a long way in the rear, with A. J. Seaton (15 horsepower Buckmobile), third.

Summary:

Five miles, Yonkers Cup, open to cars of any motive power retailing at $1,000 or less—Won by Rodney Peeler (10-horsepower Autocar); second, R. M. Alexander (10-horsepower Pope-Hartford); third, A. J. Seaton (15-horsepower Buckmobile). Time, 8:15 3-5.

Five miles, Old Glory Cup, open to American touring cars, with regular equipment, including tonneau, each car to carry three passengers in addition to the operator; latter to crank car and drive entire distance—Won by Charles Soules (24-horsepower Pope-Toledo); second, A. E. Morrison (24-horsepower Peerless); third, A. S. Lee (24-horsepower Pope-Toledo). Time, 7:12 3-5.

Ten miles, Knickerbocker Cup, open to cars weighing from 881 to 1,432 pounds—Won by Joseph Tracy (W. G. Brokaw's 30-horsepower Renault); second, Frank Kulick (20-horsepower Ford); third, H. R. Lounsbery, jr. (18-horsepower Meteor). Time, 10:15.

Ten miles, International Cup, five mile heats, for cars of each country, free for all—First heat, for Italian cars—Won by Paul Sartori (24-horsepower Fiat); E. A. Riotte (24-horsepower Fiat), second. Time, 6:20.

Second heat, for German cars—Walkover for E. R. Thomas's 60-horsepower Mercedes, driven by E. E. Hawley.

Third heat, for American cars—Walkover for Ford Motor Car Company's 20-horsepower Ford.

Fourth heat, for French cars—Won by Joseph Tracy (40-horsepower Renault); Felix Froger (70-horsepower Fiat), second. Time, 5:08 3-5.

Final heat, ten miles—Won by Joseph Tracy (30 horsepower Renault); second, E. E. Hawley (60 horsepower Mercedes); third, Paul Sartori (24 horsepower Fiat). Time, by miles, 1:03 2-5, 2:02 3-5, 3:02, 4:01, 5:01, 6:01 2-5, 7:01 3-5, 8:02 1-5, 9:02 1-5, 10:01 2-5. New records from two to ten miles. Former records by miles, 2:04 1-5, 3:06 3-5, 4:07, 5:08 1-5, 6:084-5, 7:09 2-5, 8:09 2-5, 9:11, 10:13 2-5.

Five miles, Great Empire Handicap, open to all cars: First heat—Won by Paul Sartori (24-horsepower Fiat), handicap, 1:20; second Charles Soule (24-horsepower Pope-Toledo), handicap, 1:20; third, A. E. Morrison (20-horsepower Peerless), handicap, 1:15. Time, 7:30 1-5; net time, 6:10 1-5 Second heat—Won by A. J. Seaton (15-horsepower Buckmobile; handicap, 4:16); second, A. S. Lee (24-horsepower Pope-Toledo), handicap, 1:15); third, Joseph Tracy (W. G. Brokaw's 40-horsepower Renault), handicap, 0:08. Time, 12:38 3-5; net time, 8:22 3-5. Final heat—Won by Paul Sartori (24-horsepower Fiat); second, A. S. Lee (24-horsepower Pope-Toledo); third, A. J. Seaton (15-horsepower Buckmobile). Time, 8:02 1-5.

Pittsburg Offended by A. A. A.

What promises to be a row of no small proportions has been stirred up by the action of the American Automobile Association's racing committee in first granting a sanction to the Automobile Club of Pittsburg for a race meet on Saturday last, which later was cancelled in favor of the Empire City track, at Yonkers, the Pittsburg club agreeing to postpone their meet until Saturday of this week.

President W. C. Temple of the Pittsburg club happened to drop into Chicago on Saturday, and much to his amazement found that the Chicago Automobile Club had secured a sanction for next Saturday—the same date as the Pittsburg meet, and that preparations for a big Chicago event were well under way.

Mr. Temple openly and vigorously denounced the action of the A. A. A., stating that, from the bare facts at hand, it seemed to be a case of asinine stupidity, and that on his return to Pittsburg on Monday the whole matter would be laid before him and decided action taken. Of one thing he was positive, that was that neither himself nor the Pittsburg club would brook any such indignity, and that, unless some valid reason was presented, something was likely to drop. Coming just at this time, when the long-continued efforts of the A. A. A. to induce the Smoky City Club into its fold seemed likely to be crowned with success, the action of the A. A. A. racing committee is particularly unfortunate.

What Not to do When Tires Burst.

Upon incompetent or careless drivers Baron de Caters places the blame for a large proportion of the accidents that are constantly happening.

"My experience is that there are many drivers who never take the trouble to thoroughly examine their machines before a run," he says. "You would be surprised at the easy-going way in which they undertake the difficult task of caring for and conducting an automobile. The ignorance displayed on all hands is quite sufficient to account for all the accidents that take place, and many more that, by a strange chance, do not take place.

"Take, for example, the accidents that arise through burst tires. To burst a front tire is by no means so serious as to burst a rear one. What does the average chauffeur do when he hears a report in the rear and knows something has gone wrong? Why, he applies the brakes, with more or less disastrous results. The fact that one tire has gone causes the automobile to lose its balance, and the application of the brakes causes the whole construction to swing round on the damaged wheel. How many chauffeurs, I should like to know, are acquainted with that fact? When a tire bursts there is no safer course than to bring the machine to a stop by cutting off the gas."

Tests to Reduce Dust Evil.

Dust is one of the British motorist's betes noires, and he is forever seeking some method of lessening its ravages. To this end some interesting experiments were held recently near Guilford.

First of all, a chassis supporting merely the driver and engine, etc., was driven over the track, then various bodies were fitted and tried, and alterations were made above and below and at the sides of the car. Different tires and mud guards were also fitted, and the results accurately noted by means of photography. Two photographs were taken, one near the object and the other some distance away, and in each picture appears a number, which represents the conditions under which the car was run.

For the purpose of judging the back draught, on a line with the top of the tonneau an outrig arrangement was attached, from which white ribbons depended. The disturbance of the ribbons enabled the draught effects to be observed. The road wheels on the car were also changed for others of different diameters.

Renaults to Re-Enter Racing.

Ever since the Paris-Madrid race came to its tragic end the Renault cars have been withdrawn from all road races. The death of Marcel Renault, which, it will be recalled, took place in the race referred to, was responsible for this abstention, which at the time was understood to be permanent. But the concern has decided to re-enter the field, and will next year be represented in all the big races.

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FEVER ATTACKS WILMINGTON

Three State Laws Tabloided for Local Use—Its Passage Blocked by Conflicting Authority.

It has remained for Wilmington, Delaware's chief town, to go the limit—and a little beyond it—in the matter of proposed automobile legislation. For some time the authorities have abstained from any attempt to regulate automobile traffic, alleging that in the absence of a local ordinance they were powerless to take action. As a consequence a few reckless motorists have brought the automobile into bad repute by their fast driving.

It is, perhaps, due to this combined inactivity and inconsiderateness that the severity of an ordinance drafted is due. Its drastic provisions are quite beyond anything emanating from a mere municipality. The worst features of the opprobrious Maryland, Pennsylvania and Massachusetts laws have been copied, and the result is an ordinance which, if passed, will make the lives of motorists miserable and stunt the growth of automobiling to an extent that will amount to a positive turning back of the hands of the clock.

Briefly, the ordinance prescribes a registration fee of $2 for the first year and $1 for each succeeding year; requires the display of tags and of numbers on the front and sides of lamps; permits an application for license to be rejected, or a license—that is, the right to use the common roads or even an alley—to be revoked, and borrows from Massachusetts by requiring that unattended machines be kept under lock and key.

The matter is complicated by a conflict between the City Council and the street and sewer department as to which has jurisdiction in the matter, each claiming the power to regulate street traffic.

The recently formed Delaware Automobile Association is taking a hand in the matter with the object of "toning down" the proposed ordinance. The association is not opposed to regulation; it merely wishes it done reasonably and with the least possible interference with the progress of the new transportation vehicle and the rights of motorists as road users.

To this end members of the association last week took the councilmen in their cars for the purpose of giving them an object lesson and convincing them how safe an automobile, properly handled, really is.

Won't Heed Pittsburgers' Protest.

Despite the formal protest of the Automobile Club of Pittsburg, Director McIlvain of the Department of Public Works, of Allegheny, Pa., will insist upon the enforcement of the ordinance passed by councils several months ago prohibiting the operation of automobiles in Riverview Park.

Don't Want Cars Left Alone.

One of the most preposterous ordinances yet proposed is one which the motorists of Tacoma, Wash., are opposing with the utmost energy. The ordinance is denounced as unreasonable in the extreme, and even ridiculous in some of its provisions. The points especially criticised are the speed regulation, the provision requiring that a competent person be left in charge of every machine standing still, and the clause requiring a machine to be stopped at the order of any person driving a horse or team which he fears will become frightened.

The speed limit proposed is eight miles an hour between A and K streets and between North Sixth and South Twenty-ninth streets; four miles an hour on any of the numbered streets running down the hill between Division avenue and South Twenty-fifth street, and six miles an hour on a number of other streets and avenues.

Patee Tests Kansas City's Law.

In order to test in the courts the new Kansas City (Mo.) automobile ordinance, Fred Patee recently had himself arrested and fined, after which he took an appeal. His attorney said that Patee had wilfully violated the law and had then reported that fact to the city attorney, so that prosecution could be begun. He added that the case was intended merely as a test case to establish the rights of the city. Arrests can be made under the ordinance, however, unless the city is enjoined from enforcing it until the test case has been decided.

It was given as his opinion by a member of the city's legal force that the city could enforce the provisions of the ordinance only relative to speed and lights, and that the other provisions would not stand the test of the courts.

Campbell Attacks Oshkosh's Ordinance.

In the case of the city of Oshkosh, Wis., against W. J. Campbell, the validity of the ordinance regulating the speed of automobiles was attacked by Campbell's attorney in the Municipal Court. He placed City Clerk Witzel on the stand and asked him if any other ordinance respecting vehicles had any provision regulating speed in going around corners. The city clerk answered in the negative. The attorney then in his argument attacked the ordinance as being discriminating, and cited several cases in proof of the assertion. He argued the point at some length, and City Attorney Stewart replied.

New Ulm Calls for Horn Tooting.

The Council of New Ulm, Minn., has passed an ordinance that the speed of automobiles in that city shall not exceed six miles an hour, and that a bell or horn shall be sounded when within seventy-five feet of a street crossing, and to be sounded continuously until the crossing is reached, and that automobiles must be provided with lamps or lanterns at night, and that the light must be strong enough to be seen four hundred feet. The penalty for violation of the ordinance is not less than $5 nor more than $100.

JUSTICE OVER-REACHES ITSELF

Bumptious Bay State Magistrate Treads on International Ground and is Forced to Apologize.

One judge has at last discovered some one who is immune from punishment under the anti-speed laws. In consequence, he finds himself in danger of both fine and imprisonment, to save himself from which he has had to make prompt reparation—viz., rescind his finding, remit the fine and make an apology.

This overhasty official is Acting Justice H. S. C. Phelps, of the Lee (Mass.) District Court. His victim is Hugh Gurney, third assistant secretary of the British Embassy, who has been summering in the Berkshires. Being a British subject and member of the diplomatic corps, he is not amenable to the local court before which he was hauled, charged with illegal speeding. Judge Phelps, who is a manufacturer by vocation and a jurist only in his leisure time, appears to have been unaware of this important fact, and when informed by his prisoner of the sanctity of his person added insult to injury by declaring, in effect, that he did not care a darn, and that he (Phelps) would fine him (Gurney) all the same. Upon Gurney declaring that he would not admit the court's right to sentence him, Phelps fined him again, and threatened to send him to prison if he did not pay.

Naturally, this has stirred up a hornet's nest. Gurney communicated with his fellow diplomats, they with the British Minister at Washington; then the United States State Department was informed of the outrage, when it started hot foot after the Massachusetts authorities, and the acting Governor of that State read the riot act to Justice Phelps. So the latter is in a most alarming predicament.

The telegram from the State Department to Acting Governor Guild of Massachusetts follows in part:

"British Embassy informs me that Mr. Gurney, third secretary of that embassy, charged with driving automobile at excessive speed, was to-day arrested by deputy sheriff and taken, after entering protest, under threats of force, to the court at Lee, when, in spite of his protest, he was sentenced by H. C. S. Phelps, special justice of the Lee police court, to pay a fine of $25, and on his declaring that he could not admit the right of the court to sentence him another fine of $25 for contempt of court and to go to prison if he did not pay."

"The Assistant Attorney General informs me that if the facts are as stated above you have committed, in this particular case, a grave breach of international law.

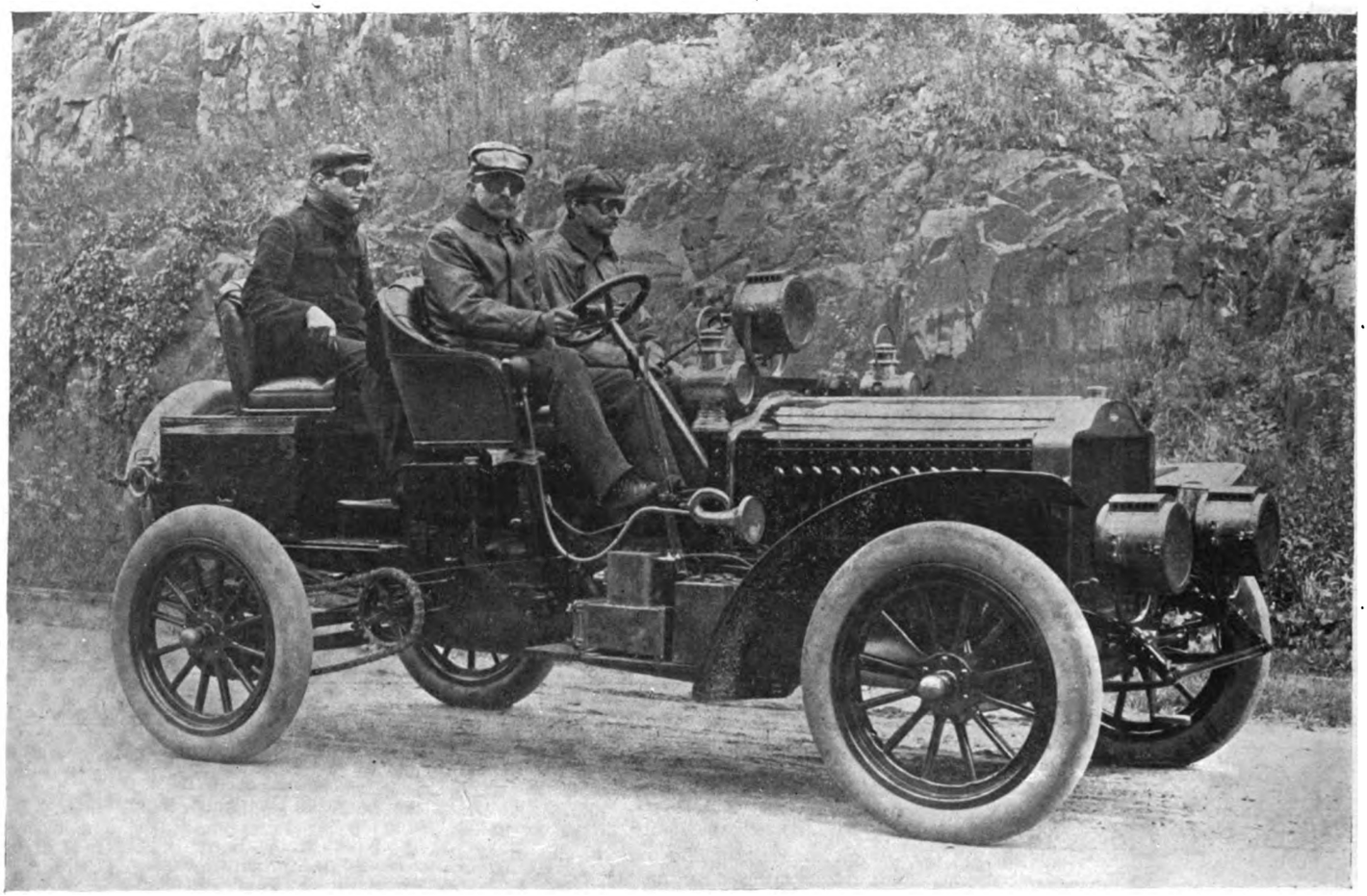
"Therefore if a fine was imposed and collected, the commonwealth will apologize, the fine must be remitted, and I need not suggest to one so respected as you the personal amend that you will, of course, desire to make to Mr. Gurney for the error in method adopted by your court in this unusual case."

In consequence Justice Phelps, who was at first extremely "cocky," is now ready to eat humble pie. He is quoted as saying:

"I've no disposition to be paraded up and down the case; there's been enough of that already. All that I can say is that if in imposing the fines I was guilty of an error I will gladly apologize when the proper time comes. As it was, I did only what I believed was right."

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Columbia Crew That Will Seek to Regain the Chicago-New York Record.



BERT HOLCOMB AT THE WHEEL; LAWRENCE DUFFIE BESIDE HIM; E. C. BALD IN REAR SEAT.

If the weather be favorable, Bert Holcomb, Lawrence Duffie and E. C. Bald, comprising the Columbia crew, will leave Chicago this morning, bent on regaining the Chicago-New York record, which for nearly a year stood to Columbia credit, despite fourteen attacks by zealous rivals. The men, who will take turns at driving the 36-horsepower Columbia car, were to have started on Monday, but unfavorable weather made postponement advisable. The record now stands at 72 hours 43 minutes. The Columbia men, who drove the car from Hartford to Chicago to familiarize themselves with the course, expect to cover the 1,100 miles inside of sixty hours, their schedule as laid out being as follows:

Leave Chicago, 3 a. m.; due South Bend, 8 a. m.; due Cleveland, midnight; due Erie, 5 a. m.; due Buffalo, 10 a. m. W. T.; leave Buffalo, 11:30 a. m. E. T.; due Bath, 5 p. m.; due Binghampton, 11 p. m.; due Delhi, 4 a. m.; due Kingston, 8 a. m.; due Newburg, 10 a. m.; due Weehawken, 1 p. m.

Yesterday morning, W. F. Winchester, in an air-cooled car, left Chicago on the same record-breaking mission.

Real Estate Made Valuable.

Since the coming of the automobile English house and land agents state that people are no longer unwilling to rent mansions in districts formerly regarded as inaccessible. With the motor car's almost magic agency of transport dwellers in the country cease to consider the number of miles that a house may be from a railway station or town. A lady may do her shopping in a town twenty miles away with as little trouble as she had in visiting one five miles off by means of a horse and trap. She may lunch with a friend at forty miles distance and return home comfortably to dinner.

The motor car has this advantage over the train: That it takes the traveller all the way from his starting point to his destination. Therefore, on a fifty-mile journey one may travel as quickly by car as by train. For, although the train travels faster—sometimes—than the car, the time lost in getting to and from the railway station at each end of the journey annuls that gain. In journeying from London to Brighton, for example, most people are so situated that they could, without transgressing the legal limit, get from house to house by car in very little longer time than by train, with the advantage of starting when they liked and not when the railway time table ordains.

London's School Proves a Success.

So successful have been the elementary classes in automobile engineering at the Battersea (London) Polytechnic that it is proposed to add a class of a more advanced nature. It will probably take the form of an evening class for motor car engineers, which foremen of garages and moderately well qualified men in factories could attend with advantage.

Nashville's Objection to Numbers.

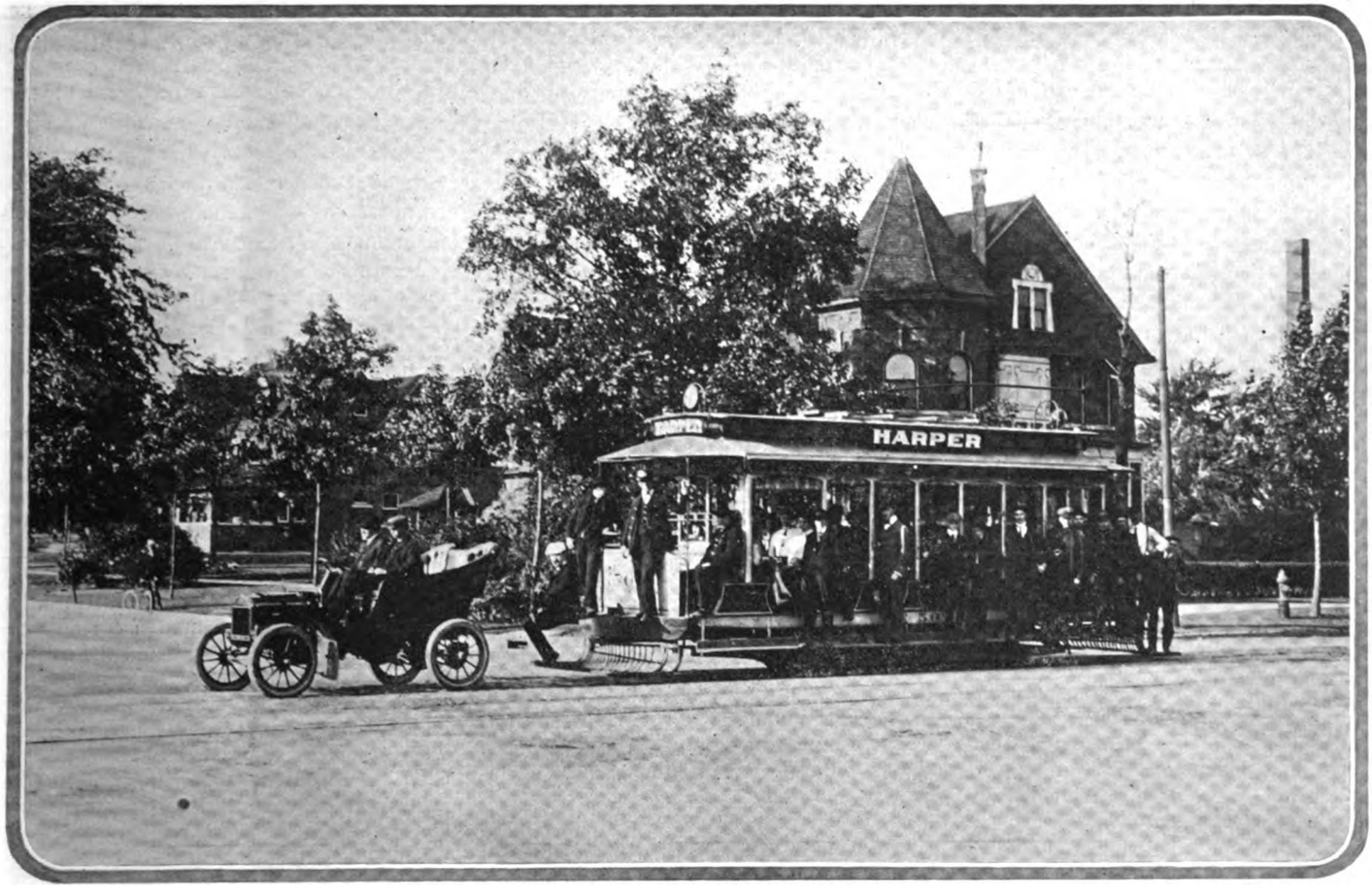
Nashville, Tenn., is one of the few places in which automobilists have objected to the numbering of their vehicles, and on curious grounds. The proposed law does not exempt non-residents, and they fear that this would keep visitors away from the city, and that other points in the State may retaliate by requiring Nashvillians to purchase and display their numbers. It was suggested that if the ordinance be so amended as to exempt non-residents it would prove satisfactory.

Surveying an Automobile Road.

The Maine State surveyors are examining a new route for an automobile road from Poland Springs to the White Mountains. They are using a Rambler touring car furnished by E. A. Gilmore, of Boston. S. H. Baker, of the Boston office, is driving the car, having met the State surveyor and his assistants in Portland.

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Testing the Pulling Power of an Automobile.



One of the most original experiments to discover or demonstrate the pulling power of an automobile was recently conducted by the experimental department of the Olds Motor Works at Detroit, and with remarkable results. The accompanying illustration will convey an idea of the performance. A 10 horsepower Oldsmobile light tonneau car was coupled to an electric street car, the trolley of which was tied down. The route of the streetcar was then followed until the car was filled with passengers, fifty-one in all. Although the weight of the streetcar was 17,200 pounds and the aggregate weight of passengers 6,885, or a little more than twelve tons weight in all, it was towed at a good rate of speed, despite the fact that these cars are equipped with very heavy motors, which are geared direct to the wheels, thus creating a large amount of extra friction to be overcome.

What Motoring in France Entails.

In more respects than one the automobile is France's "good thing." It brings in every year quite a respectable sum to the State. The tax paid in France is 60 francs a year for automobiles of two places, and 100 francs for those of four places.

Furthermore, a car doing an average distance of, say, thirty miles in Paris, and with a motor of 8 horsepower, will use 12 litres of gasolene, and in France the duty on this amounts to two cents per litre and the octroi duties to four cents. At the end of the year the consumption will be 4,320 litres of gasolene, plus 10 per cent of oil—say, 4,753 litres. The expense, therefore, will be: Customs duties, 475 francs 20; octroi duties, 750 francs 40; total, 1,225 francs, or $245.

Multiply this figure by the thousands of automobiles in use, and some idea may be obtained of the amount which flows yearly into the funds of the State.

What the Indian Failed to Grasp.

Professor Frederick Starr, of the University of Chicago, in his study of the different races of the world, has had many curious experiences among primitive tribesmen.

To an Indian, one day, he attempted to explain the principles of the automobile. The Indian was intelligent, and Professor Starr's explanation was a model of directness and lucidity.

"Well," he said at its end, "do you think you understand all about the automobile now?"

The Indian, who had listened intently, replied: "Yes, I understand all but one thing."

"And what is that?" said Professor Starr, thinking to clear up in a word some trifling point he had overlooked.

"I don't understand," said the Indian, "what makes the automobile go without horses."

The Tour of a Novice.

One of Elizabeth's most enthusiastic motorists is Dr. Thomas N. McLean, of 1,144 East Broad street, that city, who bought a model A Cadillac and used it in his first tour through some of the New England States recently. Dr. McLean, his wife and family were away on their tour about three weeks, during which time they travelled 1,000 miles, but had not a single accident or delay.

The success of this tour is remarkable, inasmuch as Dr. McLean was a novice when he started out, although he cannot be included in that class after his notable performance. Their route led them through Newark, Jersey City, New York and along the old Boston post road as far north as Hartford County, Conn., Dr. McLean's former home. Here they spent a few days, touring in the vicinity of the town, then left for home, travelling gently and enjoying the outing at every turn.

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NO TRAINS FOR BAXTER

"Have'nt Used One This Year," Says the Maine Canning Magnate—How he Travels.

One of the earliest and most enthusiastic users of the automobile in Maine was H. C. Baxter, of New Brunswick. He was the owner of a number of American and foreign cars three or four years ago, and he got plenty of service out of them, both in short drives and on long tours.

His love for touring has undergone no abatement, but at the present time he is combining business and pleasure in his use of the motor car. He relies on his 35-horsepower Peerless limousine to carry him regularly from one to the other of his widely scattered business interests.

Mr. Baxter owns a chain of canning factories scattered through New Hampshire, Maine and Eastern Canada. He spends the summer months at Walpole, N. H., concentrating his attention on three large canneries in that region. Formerly he depended on the slow and uncertain accommodation trains to carry him from one town to another, and on his horses for transportation within the towns. But this year he determined to emancipate himself from dependence on train schedules, and accordingly he drove his Peerless limousine to Walpole from Brunswick, Me., where he had been using it during the winter, and put it in commission among the foothills of the Green Mountains.

All this summer he has been making daily trips to his various factories and has found going about from place to place a source of pleasure rather than of annoyance, as it formerly was. One cannery is situated at Westminster, just across the Connecticut River from Walpole, and Mr. Baxter makes a short stop there each morning. Another of his canneries is at Windsor, thirty-five miles to the north, and Mr. Baxter makes this trip every Monday, Wednesday and Friday. On Tuesday, Thursday and Saturday he drives in his car to Brattleboro, twenty-two miles to the southeast, where the third cannery is located.

Frequently his wife and four children make the trips with him. Instead of eating his luncheons, as formerly, in dingy station restaurants, he is free to drive to the charming little country inns which may be found at intervals along the road. Rain never causes a break in this routine, as, with the limousine, the elements can be defied and no matter how thick the mud may be on the steep hills which have to be traversed the ample power of the engine carries him to his destination on schedule time.

Mr. Baxter declares: "The exhilaration of daily driving gives a man just the 'ginger' he needs to tackle his business duties. I haven't been on a railroad train this summer, and I have been to Boston and New York, too."

Incidentally, Mr. Baxter, who has driven automobiles since 1898, is as enthusiastic a Peerless adherent as there is in New England, and the woods are full of them in that section.

These Aldermen Were Convinced.

Prejudice born of ignorance existing in the minds of Grand Rapids (Mich.) councilmen has been partially dissipated by rides given them by local motorists. As a result they will recommend that the present ordinance be amended so as to permit a speed of ten miles an hour in the business part of the city, in place of the present limit of seven miles. As Alderman White put it:

"Our experience gained by rides in automobiles has shown us that this is not a dangerous rate, and that many of the large cars cannot run seven miles an hour unless the power is shut off occasionally, allowing the machine to run by its own momentum. The fifteen-mile rate will be permitted under the same restrictions as at present."

Hobbses Undertake 8,000-Mile Tour.

Mr. and Mrs. W. W. Hobbs, of Lincoln, Neb., left that city last week for an eight-thousand-mile automobile trip, which will include a circuit of the Pacific Coast cities. Arriving at Seattle, they will spend some time about Puget Sound, thence proceeding to Portland and on down the coast by rail to San Francisco. Returning, Mr. and Mrs. Hobbs will pass through the extreme southern portion of the United States, New Mexico, Arizona and Texas. They will visit at Hot Springs, Ark. a short time, and will then come almost directly to Lincoln, through Kansas City and St. Joseph.

Houston Elects Lady Secretary.

Officers and directors were elected last week by the Houston (Tex.) Automobile Club at a meeting to complete the permanent organization. The following were selected: President, G. J. Palmer; vice-president, Spencer Hutchins; secretary, Miss Bering; treasurer, Dr. M. J. Lossing; directors, Theodore Bering, W. A. Burkett, Harry Dooley, Dr. W. R. Eckhardt, Charles A. Myers, D. Peacock and Dr. W. M. Brumby.

Omaha Party Starts for New York.

Frank C. McGinn and wife and Creighton Lorgy and Edward McIntyre, Mr. McGinn's brother-in-law and cousin, respectively, started from Omaha, Neb., last week on an automobile trip to New York City and return via St. Louis. They are travelling in a Winton car, and expect to be on the World's Fair ground by Nebraska day, October 25.

Glidden Gets Letter from India.

"Charles J. Glidden, Esq., touring the world by automobile motor, care Postmaster General, America," is the address on a letter containing the postmarks of a city in India received last week at Washington by Postmaster General Payne. The Postmaster General will forward the letter.

TAX ASSESSORS WERE WARY

When Automobiles Averaged but $370 Each They Boosted Values Throughout the State.

Minnesota automobile owners will hereafter pay higher taxes, in consequence of a general increase in valuations which has just been made. The increase varies from 25 to 150 per cent, and appears to have been made almost at haphazard.

According to the county returns, the number of automobiles has increased 75 per cent in Minnesota within one year. There were 390 of them a year ago, and there are 696 in 1904. Ramsey County is said to have 94 automobiles and Hennepin County 374.

The county assessors say that, as automobiles have become more numerous, they have individually grown in size and value. For 1903 the value of such machines was reported at $40,497, or $101.48 apiece. For 1904 the total value has risen to $257,540, and the average value to $370.

But the State board is not satisfied. It raised the minimum valuation for an automobile to $200, and it increased the average valuation throughout the State about one-third. In Ramsey County automobiles were raised 50 per cent; in Hennepin County, where reported values were higher, the machines were raised but 33 per cent. In Olmsted and Polk counties 50 per cent was added; in Lac qui Parle, Nobles, Redwood, Swift, Waseca and Yellow Medicine counties, 100 per cent; in Todd County, 66 per cent; in Dodge, Douglass and Morrison counties, 66 per cent; in Pipestone, 60 per cent; in Scott, Sibley, Steele, Traverse and Wabasha counties, 50 per cent, and in twenty-five other counties 33 per cent.

This action will augment the total assessment for the schedule by $86,000.

Western Railway Officials Grow Wise.

Light touring automobiles with all accoutrements necessary for travel over railroad tracks will be used by high officials, and possibly by the division superintendents, of the Great Northern system. General Manager Frederick E. Ward has received his car already, and tests have proved it to be a great success for inspection work.

General Manager Ward made several runs between Grand Forks, Crookston and other points in the northern part of Dakota, and found that the machine will run on steel rails as fast as comfort will allow, and that it excels by far the old "special car" manner of inspecting the roadbed and the lines. Several machines have been ordered, and it is thought that each of the division superintendents will receive one.

Census of Dayton's Vehicles.

Nearly 9,000 of the estimated 10,000 vehicles in use in Dayton, Ohio, have been licensed, and the city's coffers have been enriched to the tune of $9,000. The census reveals that there are 125 automobiles, 10 motorcycles, 4,650 bicycles, 1,700 one horse wagons, 1,445 one horse buggies, etc,

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Proving the Practicability of Motor Cars for Military Purposes.

IN AMERICA.

While not much was said of it in the newspaper reports, it transpires that in the recent army manœuvres on the Pacific Coast, the automobile that was used experimentally acquitted itself with high honors and proved its usefulness in that branch of the service.

Charles Willeford, who drove the Winton car that was employed, considers it the most trying work to which an automobile ever has been called on to perform.

"I was engaged by Colonel West, of General McArthur's staff, for a period of twenty-five days to test my automobile for army service," he says. "The first severe test given the machine was in running from San Francisco to Camp Atascadero, a distance of 283 miles. We left San Francisco on August 5 on the 5 o'clock Oakland boat, for San Jose, arriving at the Hotel Vendome for dinner. We remained at the Vendome overnight, and ran to Monterey the second day. On the third day we ran from Monterey to Paso Robles, which was practically the end of our journey. The party consisted of Colonel West, Major Dunning, Captain Weyman and Thomas Barbour, who can testify to the remarkable run made from San Francisco to Paso Robles without any mishap whatsoever.

"Upon arriving at camp, I was instructed to report to General McArthur with the machine, for a general reconnoitre of the ground to be occupied for the manœuvres. I started at 8 a. m. with General McArthur, Colonel West, Captain Wynn and Captain Hartman, and spent the day in traversing the rough wheat fields and mountains adjacent to the camp. Be it remembered that the ground used for the camp contained no roads whatever; we had to make our own roads wherever we went, through wheat stubbles three feet high, over ditches, river bottoms and over mountain sides, the grades of which were often over 30 per cent.

"I have driven automobiles for a number of years and have had a great deal of experience with the Winton touring car, and, while we encountered grades which I felt were almost impossible for an automobile to climb, yet, knowing that the entire responsibility of the test of the Winton car for use rested upon my shoulders, I determined to either break the car to pieces or prove that it was all the manufacturers claim for it. I am quite sure that any of the officers who accompanied me on this day will corroborate all the statements I have made.

"General McArthur stated to the writer, after we had finished the trip, that it would have taken him four days' tiresome riding on horseback to reconnoitre the ground covered by us in a period of six hours, and at the end of that time he was not the least bit fatigued, as he would have been had he made the trip otherwise. I remained in the camp with the machine for twenty-one days and was called upon each day to make trips over the camp, covering from 40 to 112 miles per day. During all this time, no part of the machinery of my car failed to respond, and not a minute's time was lost to the officers who were using the car.

"A record was kept by army officials of all the movements of the car, amount of fuel consumed, etc., etc., all of which will be forwarded to the department at Washington. From the performances of this machine, I am positive that the automobile will, in the near future, be a part of the equipment of every brigade in the United States Army; in fact, I was told by one of the army officers that an automobile would be purchased for the use of every brigade commander.

"I found the United States Army officials with whom I came in contact most agreeable in every way, and very much interested, not only in the running of the machine, but also in the mechanical construction; and the ease with which the machine was operated was a great surprise to them. The twenty-five days I spent in the employ of the government were very pleasant indeed, and when the government has placed its order for a number of automobiles for army service, I will be one of the first to enlist to serve my country as chauffeur on a Winton touring car."

IN GREAT BRITAIN.

More than one hundred motor cars were employed in the British military manœuvres, together with large numbers of heavy transport wagons and motorcycles, the latter being used for carrying dispatches and scouting. Wherever used, the various motor vehicles performed their allotted tasks successfully and with a celerity that frequently excited astonishment.

The operations consisted of an invasion of Engiand from the Essex coast under the command of General French, and the protection of the country by a force under General Wynne. Every general of note was conveyed in record time, so far as military movements are concerned, on motor cars. The commander in chief, the Duke of Connaught, was conspicuous throughout the manœuvres with a 30 horsepower Napier car. General French, who conducted the invasion, directed operations from a Daimler car.

As an instance of the work of the transport corps, it may be noted that the entire supply of bread for the defending and invading armies was delivered to the troops by gasolene and steam lorries.

The absence of breakdowns was remarkable. An 8 horsepower De Dion car, in the course of ten days, ran over seven hundred miles, including trips across boggy agricultural land and rough camp field, the whole distance being completed without a single stoppage through accident or for repair or adjustment. There was no "legal limit" to observe, and the foreign military attachés were conveyed daily from headquarters in fast cars that left all other methods of transportation in the rear.

IN FRANCE AND GERMANY.

Automobiles will be used on a larger scale than usual this year in both the German and French military manœuvres. For the former country the motor car division of the Royal Railway Brigade has made all preparations for the general use of these cars in action, and has been instructing thirty infantry men in the art of driving, as the division itself is not large enough in numbers to fulfil all requirements. Fifteen of the cars have been hired for the occasion, and the firms supplying the vehicles will be placed first on the lists for the distribution of any resulting orders for cars and cycles should their makes come through the ordeal well. Several of the steam wagons belonging to the division will be requisitioned for the conveyance of supplies. Motorcycles also will play a part, chiefly in scouting and in courier work.

The French authorities are arranging to make greater use than ever of motor cars. The generals of the French army know how to appreciate at their proper value the automobiles with which they are supplied. Three of the generals are using automobiles placed at their disposal by automobilist reservists who are doing their twenty-eight days, and there is to be seen quite a number of automobiles in use by the officers.

The general officers use them to visit the cantonments of the troops under their orders, and visits that formerly occupied a whole day on horseback can now be accomplished in half a day. An army corps will frequently occupy eighteen miles of country, and often the general in chief is from fifteen to thirty miles distant from the general commanding the corps, and in order that immense modern armies may have the cohesion indispensable to success it is necessary to reduce to a minimum the time required for the establishment of direct relations between the general in chief and the army corps. The automobile lessens this difficulty by increasing the rapidity of communication. And it is with this end in view that the military authorities have followed with deep interest the progress of the automobile industry.

In France the trials of military automobiles began in 1897. In 1900 their use was prescribed by the rules, and since then a certain number of automobiles of different models are set aside for the generals' quarters of each army corps during the grand manœuvres. These vehicles are used during the marches, in the cantonments and during the battles.

The automobile may be said to be the indispensable complement of the telegraph and the telephone for the transmission of orders. Finally, during the battle the commanding general can make use of the automobile in order to transport himself rapidly to any point where his presence may be deemed necessary. This is well understood in high quarters, and the growing popularity of the automobile in the army is the proof.

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CAUSE OF ENGINE KNOCKING

May be Due to Piston Working Dry—How to Avoid Breaking Pinion Teeth.

If the engine becomes overheated a knocking will in all probability be heard. This conveys the impression that the piston pin is loose in the piston or in its bearing in the connecting rod end, or that the big end brasses embracing the crank require adjustment. The knocking is actually due to the piston working dry in the cylinder, and unless an excessive supply of lubricating oil is at once given and the engine allowed to cool down there is every possibility that the piston will seize in the cylinder and score it, when an expensive renewal of piston or cylinder, or probably both, will have to be made.

Never run the engine to its utmost capacity for a longer period than is absolutely necessary, unless you wish to shorten its life considerably. When the car is on the level or running downhill, the speed desired can be obtained by judiciously advancing the spark and reducing the gas by means of the throttle valve. This at the same time gives economical running.

When pinions are keyed to the shaft the keys are made with the very greatest care, and the pinions are, besides, held on the shaft in various mechanical ways. If, however, a pinion should become unkeyed, thus running free on the shaft, it will become necessary to dismount the gear, withdraw the shaft and replace the pinion in position and fix the key in its place, taking the precaution, however, to reinforce it either by a piece of tinfoil or very thin tin corresponding exactly with it in size. In driving the key home interpose a piece of hardwood between it and the hammer.

A wrinkle to employ which prevents keys slipping or nuts coming unscrewed is to immerse them at entering in hydrochloric acid. This acid (spirit of salt) rusts the parts in contact and binds them very quickly. When a key slips and there is no space for tinfoil to be introduced this remedy can be employed effectively.

Breaking of pinion teeth is usually due to the awkwardness of the driver either from not withdrawing the clutch sufficiently when changing speed in passing from the lowest to the highest, or more frequently by changing too rapidly from the highest to the lowest. For the latter operation a good driver, having withdrawn the clutch, will wait to manœuvre his change speed lever as the car slackens speed while using the speed required. If hurried to change speed brake lightly, by which the full force of the car will be prevented from taking effect on the teeth of the spur wheels, risking breakage.

It is necessary to examine the change speed gear from time to time, and if it is seen that the teeth are broken in the slightest degree the pieces should be immediately removed from amid the mess of grease and oil with which the case is filled. If left any time these pieces will infallibly find their way between the wheels and cause other and more serious damage. If, unfortunately, you break several adjoining teeth on the same pinion, the speed, including that particular wheel, becomes useless. When such an accident occurs the first thing to do is to fish out the pieces until satisfied that the last morsel has been removed, then make the best of one's way home on another speed.

Tips on Care of Tires.

Pneumatic tires should be kept in a temperature of about 60 degrees in a dark place, and, if possible, out of a draught, and should never be exposed to the rays of the sun before they are used (the sun has not so much effect upon tires after use); if they are, they will lose their elasticity and become brittle and small cracks will appear, which will gradually grow larger. Immediately after use pneumatic tires should be cleaned from wet and mud, and cuts in the covers should be closed so as to prevent water getting in and rotting the canvas, which is the cause of many bursts.

Proper Air Pressure for Tires.

The pump for inflating the tire should always have a pressure gauge upon it, and the tires should be pumped sufficiently hard if they are to last any reasonable length of time. On light cars about fifty pounds to the square inch; on medium weight cars about seventy-five pounds to the square inch, and on heavy cars about one hundred pounds to the square inch, and racing motor car tires are frequently pumped to about 120 pounds to the square inch.

Man Power vs. Horse Power.

The usual estimate made of the amount of power a man can develop is too high. The usual estimate is one-sixth of a horsepower; taking a day's work of ten hours, a man can put out about one-ninth of a horsepower. For very short periods a strong man can develop possibly a horsepower, but for such a period as even a minute a man who can develop three-fourths of a horsepower is exceptional.

One Source of Short Circuits.

If accumulator cells are not secured against jumping around in the battery box there is a strong possibility of their short circuiting, either momentarily or continuously. This may or may not affect the sparking of the motor at once, but will shorten the life of the battery. Keep the cells well packed or in some way secured against movement.

Advantages of a Hard Tire.

The pneumatic tire causes suction, and therefore raises dust. The narrower the tread of a tire the less the dust nuisance, whether it is a solid or pneumatic tire, and the same remarks apply to side slip, so that users of pneumatic tires should keep them pumped hard.

LEARNING TO CHANGE GEARS

How the Novice May Acquire Practical Knowledge Without Any Danger.

To the novice, gear changing is a ticklish operation. He can accustom himself to it in private if he will block up the rear axle well and stably so that the tires are at least two inches from the ground level, and wedge the front wheels at front and back with substantial wedges or planks.

Start up the engine and sit at the steering wheel seat; depress the clutch pedal slightly, and gently work the speed lever to try and bring it into the first speed notch. Probably a grating noise will be heard, and you may fail to get the wheels properly in mesh. Let back the lever to its original position and try again. If the lever goes into the notch, then at once let up the clutch pedal gently, and you will notice the rear wheels will at once begin to revolve. Depress the clutch and they will stop; let it in again and they start.

Practise this, and afterward try to get in the next speed higher, first by depressing the clutch and at the same instant bring the speed lever into the next higher notch and immediately let the clutch in gently without loss of time. The rear wheels will now revolve faster, and you can then try higher speeds; then practise reducing the gear by doing everything in the same order. While on each of the gears the engine can be run fast or slow with the throttle and spark levers, as before mentioned.

The reverse can then be tried exactly in the same manner, most cars having the reverse and forward speeds actuated by means of one lever. In the exceptions to this rule there is no difficulty in following out the operations to be gone through if the levers are carefully examined and their effect noted when they are operated.

The Proper Fit of a Piston.

To give the best results a piston should be made just as close a fit for the cylinder as it can possibly be without actual binding and it consequence, seizing. Allowance must always be made for the contraction of the cylinder, which takes place upon its becoming heated; neglect of this precaution results in seizing, which is nothing more or less than the wedging of the piston in the cylinder. If, while in this condition, the crank shaft is revolved by main force the movement of the piston up and down scores the smooth sides of the cylinder, and either ruins them or leaves them in such condition that it becomes necessary to rebore and lap the cylinder.

Opinions naturally differ as to the exact amount of clearance that should be allowed. In practice it ranges all the way from one-fiftieth to one-hundredth of an inch, and the nearer it is to the latter, provided the piston still moves slowly and without unnecessary friction, the better it is, as more compression is thereby obtained.

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The Odd but Usual Failing.

Jumping at conclusions and then sticking to them through thick and thin is sometimes productive of a lot of unnecessary work. The real cause of the troubles sometimes becomes difficult to find when a motorist once gets it firmly in his head that a certain part of the mechanism is causing it.

One motorist had an interesting example of this recently. The magneto plugs of his car had run over sixteen months, and, thinking it was time to change them, as they had become somewhat worn, he fitted a new pair.

Immediately before the alteration the car had been running all right, but, when the plugs were fitted, one cylinder proved inoperative. He naturally was convinced that it was the ignition which was at fault, seeing that the failure occurred immediately after the alteration in question, and spent a considerable time trying vainly to locate the source of the trouble. He then replaced the old plugs, but the cylinder still remained inoperative, which went to show that it was not the plugs which caused the trouble.

It was only then that an examination was made of the engine generally, when it was found that one of the exhaust valves had stuck up, which, of course, prevented that particular cylinder from working.

The "Set" of the Valves.

If the exhaust and—if of the mechanically operated type—the inlet valves are not set exactly right they will give a lot of trouble. An exhaust valve that opens too soon and closes too late, or vice versa, will reduce the efficiency of the motor to a marked degree. It should open at the bottom of the piston stroke, or even a shade sooner, and close when the piston reaches its highest point. If it remains open for even the smallest space of time over the top of the stroke a portion of the incoming charge will escape, thus reducing the force of the following explosion.

As for the inlet valve, it should begin to open immediately following the closing of the exhaust, and close at the bottom of the stroke.

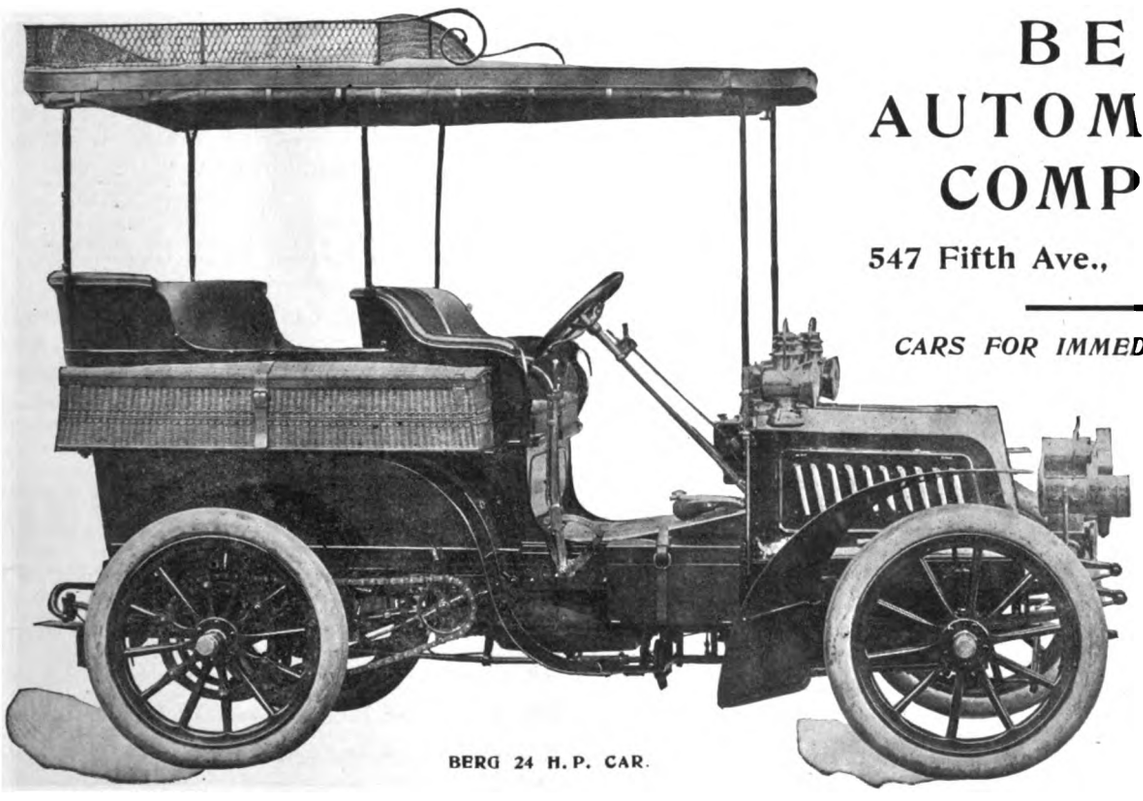
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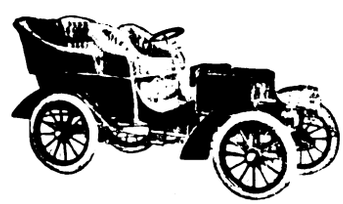


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The Week's Patents.

770,611. Detachable Pneumatic Tire. Charles S. Scott, Cadiz, Ohio. Filed June 15, 1904. Serial No. 212,699. (No model.)

Claim—1. A detachable, pneumatic tire for automobiles comprising a rim flange, an annular, expansible, auxiliary rim flange extending its outer edge, and a tire shoe having a pliable semi-inextensible selvage whose stretched circumference is less than that of the outer edge of the auxiliary flange, substantially as described.

770,567. Steering Device. William H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y., a corporation of New Jersey. Filed February 20, 1904. Serial No. 194,523. (No model.)

Claim—1. The combination with a conveyance having a part or parts to be turned, of an operating lever connected with the said part, a pair of screw rods mounted to revolve in unison, and nuts travelling on the said screw rods, on one of which the said operating lever is fulcrumed, the operating lever having a pivotal connection with the other nut, as set forth.

770,579. Magneto Generator. Herman Hess, Indianapolis, Ind., assignor to John A. Kurtz, Indianapolis, Ind. Filed November 10, 1903. Serial No. 180,628. (No model.)

Claim—1. In a magneto generator, the combination, with the magnets, of an armature journaled between the arms thereof, and an inclosing non-magnetic casing, surrounding said armature at its ends, said casing being cut away at its middle opposite active portions of the magnet.

2. In a magneto generator, the combination with the magnet, of the pole pieces carried thereby, the separate casing thirteen mounted between the arms thereof composed of non-magnetic material, and the armature journaled in said casing.

770,531. Pneumatic Tired Vehicle. Camille Mercader, Pittsburg, Penn. Filed November 13, 1903. Serial No. 181,069. (No model.)

Claim—1. A vehicle having supporting wheels with pneumatic tires, a pipe connecting with the tire and leading axially into the non-rotating axle and a connection between the hollow axle and the pump on the vehicle, substantially as described.

2. A pneumatic tired vehicle having a pair of wheels with pipes connected to their tires and connected axially with the non-rotating axle end and a pressure channel connecting with the two axial pipes, substantially as described.

770,559. Carburetter for Explosive Engines. Edward H. Clay, Chagrin Falls, Ohio. Filed June 26, 1903. Serial No. 163,173. (No model.)

Claim—1. In a carburetter, the combination of a casing containing a mixing chamber having an air inlet, a hydrocarbon inlet and a mixture outlet formed in line with said hydrocarbon inlet and in the opposite wall of the mixing chamber with a conical valve for said outlet, a needle valve which enters the hydrocarbon inlet and has its stem screwed through said valve, and mechanism under the control of the operator for moving said valve, substantially as described.

770,457. Automobile Coat. Robert Fox, New Rochelle, N. Y., assignor to Saks & Co., New York, N. Y., a corporation of New York. Filed April 1, 1904. Serial No. 201,136. (No model.)

Claim—1. An automobile coat, means for securing the coat together along its front, a front flap extending to the side of the coat, means for securing the flap to the coat along the side thereof, and a shoulder flap overlapping the upper edge of the said front flap.

770,458. Dress Protector. Robert Fox, New Rochelle, N. Y., assignor to Saks & Co., New York, N. Y., a corporation of New York. Filed April 27, 1904. Serial No. 205,132. (No model.)

Claim—A dress protector comprising a body and leg encircling portion and a foot covering removably secured thereto.

770,521. Speed Controller for Motor Vehicles. James L. FitzGerald, Newport, R. I. Filed January 30, 1903. Serial No. 141,140. (No model.)

Claim—1. In a speed controller for motor vehicles, the combination of a pivoted lever, pivoted arms, means on the lever engaging the arms, and a vibrating plate also engaging the arms and controlled by the aforesaid means on the lever.

2. In a speed controller for motor vehicles, a pivoted lever in combination with pivoted arms, and means consisting essentially of a vibrating plate for connecting one of said arms temporarily to the lever so that it may move in unison therewith and for simultaneously locking the other arm in a stationary position.

770,358. Cell for Storage Batteries. Pietro Figuccia, Boston, Mass., assignor of one-half to Louis M. Rossi, Boston, Mass. Filed February 19, 1904. Serial No. 194,398. (No model.)

Claim—1. In a battery cell of the class described, one or more parallel and non-conducting and parallel partitions rigidly secured in place and in contact with the cell at their upright and bottom edges, to divide the cell into a plurality of compartments, the upper end of each partition being cut down between its side edges to form a passageway for the electrolyte, a positive and negative electrode located in each compartment, the positive electrode of one compartment being electrically connected with the negative electrode of the next compartment, and a separator interposed between each pair of electrodes and supported in the compartment at its lower edge, whereby the separator may be removed or inserted without disturbance of the electrodes.

770,388. Internal Combustion Engine. David Roberts, Charles James and John W. Young, Grantham, England. Filed February 9, 1904. Serial No. 192,796. (No model.)

Claim—1. In an internal combustion engine, the combination with the cylinder having an opening substantially in line with the axis of the piston, an air inlet port located at one side of said opening and an exhaust port on the opposite side of said opening, of a vaporizing chamber communicating with said opening and valves for controlling said inlet and exhaust ports, whereby on the opening of the exhaust valve the exhaust gases and air will sweep across said opening and partially exhaust the vaporizer of its contents of burned gases, substantially as described.

770,392. Motor Vehicle Brake. Charles Schmidt, Warren, Ohio, assignor to Packard Motor Car Co., Warren Ohio, a corporation of West Virginia. Filed November 20, 1902. Serial No. 132,114. (No model.)

Claim—The combination of a vehicle axle, a brake wheel mounted on the axle, a bracket mounted on the axle, the upper end of said bracket projecting over the brake wheel, a brake band comprising two mem-

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bers pivotally connected to said bracket and extending downwardly therefrom around the brake wheel, an adjustable connection between said members of the brake band below the brake wheel, a lever fulcrumed on one of the members of said brake band and connnected at one end with the adjustable connection between said members, and means for applying power to the other end of said lever.

770,727. Running Gear. Albert F. Madden, Newark, N. J., assignor to Vehicle Equipment Company, New York, N. Y., a corporation of New York. Filed January 12, 1904. Serial No. 188,684. (No model.)

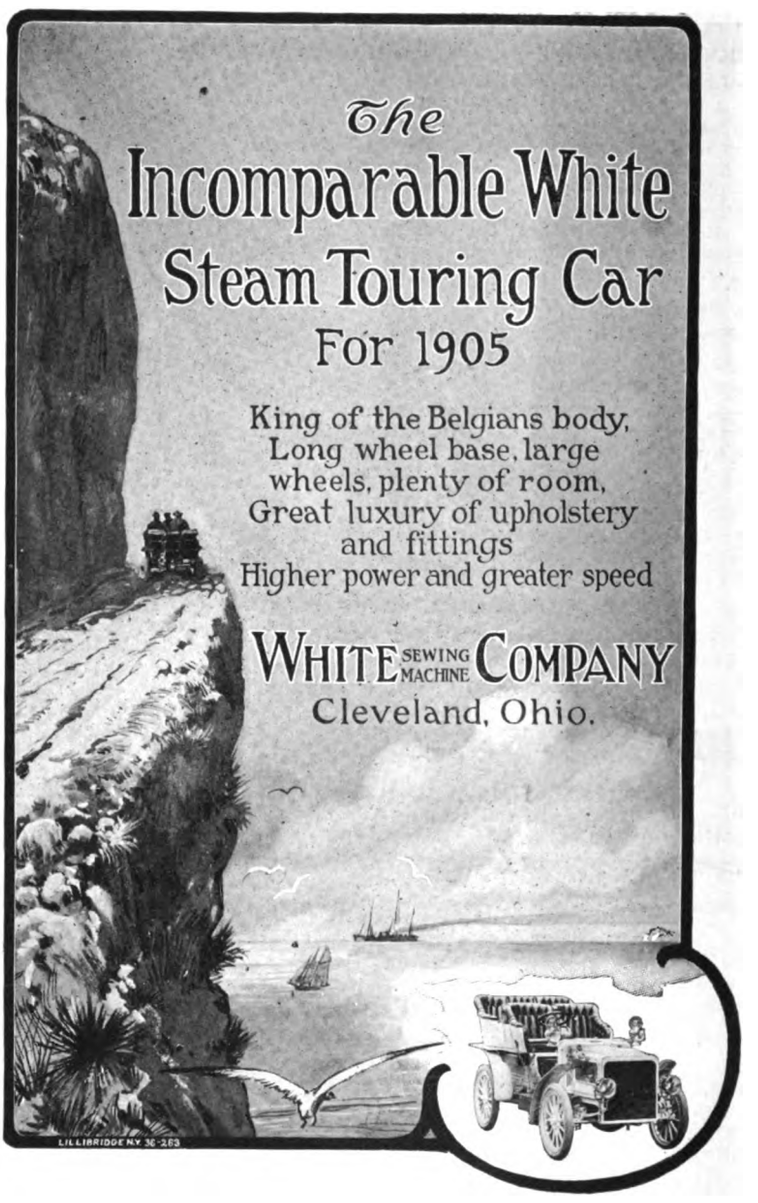
Claim—1. The combination with an axle, and a vehicle body yieldingly supported thereby, of pedestals carried by the body, each having guides arranged on opposite sides of the axle, supports on the axle adjacent the guides and rollers carried by the supports, extending between the bearing against the guides to prevent displacement of the axle longitudinally of the vehicle, as set forth.

770,725. Running Gear. Albert F. Madden, Newark, N. J., assignor to Vehicle Equipment Company, New York, N. Y., a corporation of New York. Filed January 12, 1904. Serial No. 188,682. (No model.)

Claim—1. The combination with an axle and a vehicle body yieldingly supported thereby, of pedestals carried by the body, constituting guides for the axle to prevent displacement thereof longitudinally of the vehicle, and devices pivoted in the axle, between the same and the adjacent guides, to swing in a plane transverse to the vehicle, and engaging the guides to prevent sidewise displacement of the axle, as set forth.

770,348. Tire for Vehicle Wheels. Cuthbert Burnett, Durham, England. Filed August 28, 1903. Serial No. 171,158. (No model.)

Claim—In a tire for wheels the combination of the wheel rim having a transversely disposed groove in its outer surface, a tire holding ring encircling the wheel rim having a transversely disposed groove in its inner surface to register with the transversely disposed groove of the wheel rim, and a clamping member contained in the grooves having gripping members to engage the tire holding ring and prevent its creeping upon the wheel rim.





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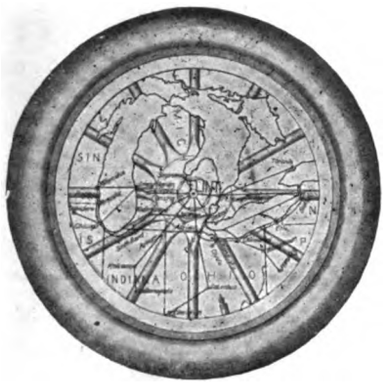
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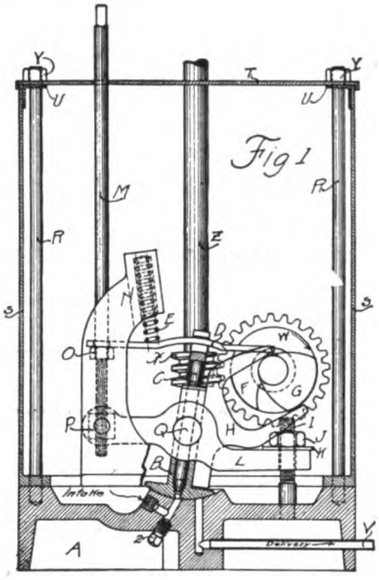
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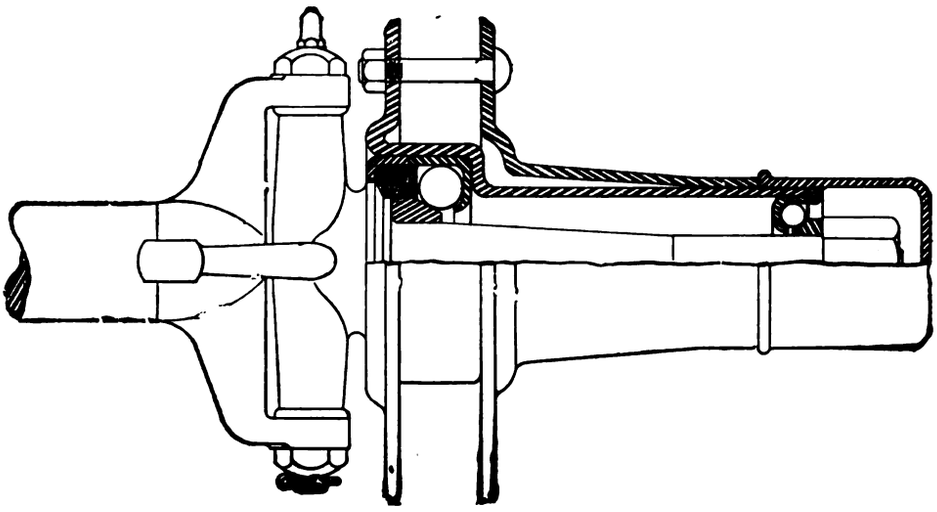
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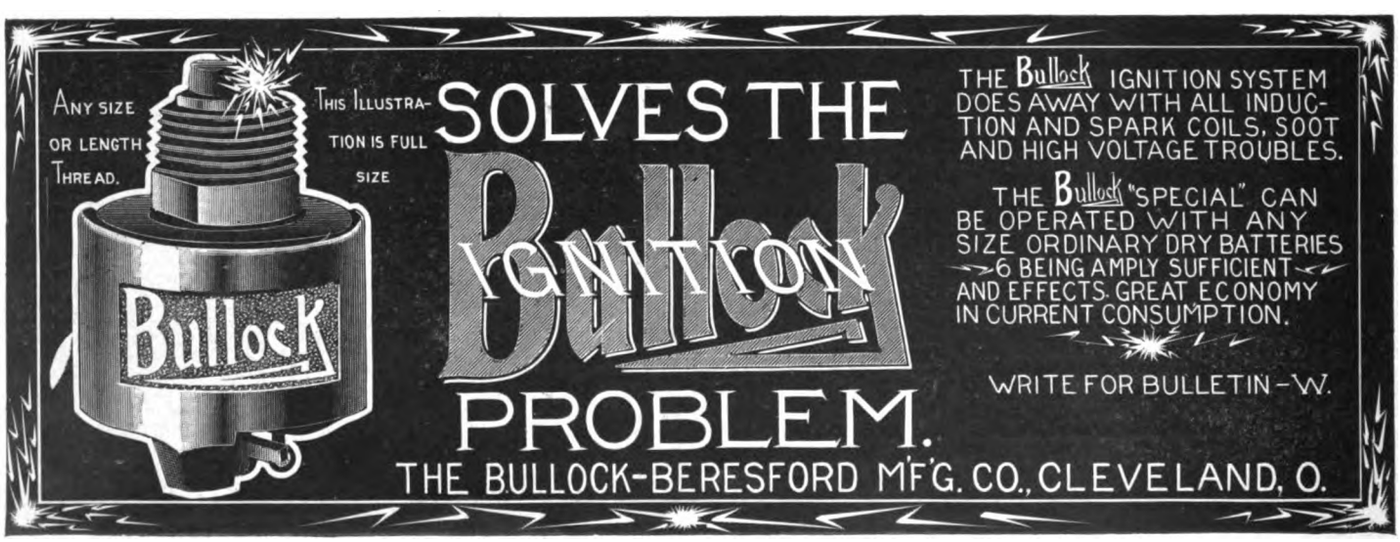
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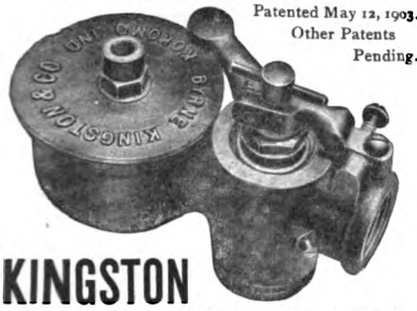
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Automobile Chains, Sprockets, Spur and Bevel Gears.
—
Baldwin Chain & Mfg. Co.,
Worcester, Mass., U. S. A.

A New Booklet on Automobile Lubrication:
"Graphite for the Motor."
Copies free upon request.
Please mention this paper.
JOSEPH DIXON CRUCIBLE CO.,
Jersey City, N. J.
New York City Salesrooms, 68 Reade St.

AUTO LEATHER

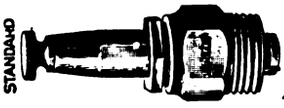
Our leathers are used by most of the largest automobile manufacturers of this country.

Ask us why.

AMERICAN OAK LEATHER COMPANY,
Cincinnati, Chicago, St. Louis, Boston.

The Miller Mica Spark Plug.

GUARANTEED FOR 90 DAYS.

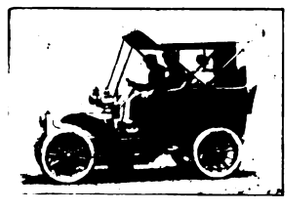


Furnished in two sizes, ⅛ inch pipe thread and Metric French thread.

Price, each, ... $1.50
To fit auto car, ... $2.50
To fit Winton, ... $2.50
Special sizes to order.

No. 6 Catalog, the largest of its kind, mailed on request.

CHARLES E. MILLER,
Manufacturer, Jobber, Exporter and Importer,
97-99-101 READE ST., NEW YORK CITY
Retail Branch: 38th St. and Broadway.
Philadelphia Branch: 318-320 North Broad St.
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Springfield Top
PATENTS PENDING.
Aluminum Bodies
Aluminum Fenders
Aluminum Hoods.
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Springfield Metal Body Co.,
7 Cypress St.,
Springfield, Mass.

RADIATORS,

TANKS,
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BRISCOE MFG. CO., - Detroit.



HIGH-GRADE LAMPS

Acetylene Gas and Oil
ATWOOD MFG. CO.,
Amesbury, Mass.



"Jack, what is C H & D, a new breakfast food?"
"No, it's a Railroad from Cincinnati to Chicago. Speaking of food, I got the best meal on their cars I ever had on a railroad."

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THE
MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,
9 Packard Ave., Racine, Wis.

THE DUERR-WARD CO., No. 1787 Broadway, New York Distributors.
ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor.

Better Not. .
have any ignition outfit than to have a poor one.

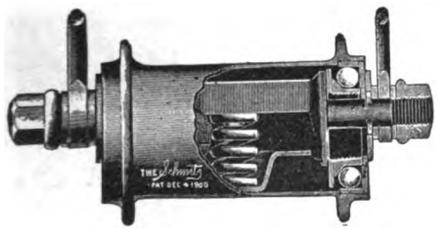


WE MANUFACTURE NOTHING BUT THE BEST.

WRITE FOR CATALOGUE

AMERICAN COIL COMPANY
West Somerville, Mass.
AUTO SUPPLY CO.,
Broadway, corner 50th St. New York Agents

SCHMITZ PATENT SPRING HUB



For BICYCLES, MOTOR CYCLES, AUTOMOBILES
Holds several World's Records for speed. Relieves and breaks jar below the axle, thereby saving at least half the wear on tire. Absolutely guaranteed.
FRANK SCHMITZ, & SONS,
560-564 Orleans St. Chicago, Ill.

STAMPING KNOWLEDGE.
We're no experimenters in this class of work. We're actual producers of the finest steel stampings in the world. You'll learn more from us by writing.
THE PARISH & BINGHAM CO.,
Mfrs. of the Indestructible P. & B. Wheel,
Cleveland.

When the Motor Misses Fire.

One of the chief complaints from which engines suffer is the fault of missing fire. The cause is often very obscure and difficult to diagnose. Sometimes the trouble disappears of itself, and at other times it defies all one's efforts to remedy. A fruitful cause of irregular ignition is weakness of the battery, so when it occurs you will begin at that end of the electrical gear an satisfy yourself that all is well with the battery.

Next have a look at the other end—the plugs—and then go over the ground between. Are the contact blades rubbing firmly on the cam? Are the tremblers on the coil vibrating angrily? You will find out by opening the compression taps and turning the engine slowly. Ah! one trembler is only fluttering. You remove the contact screw and find it badly pitted. The rivet on the blade has a minute point fused on it, just opposite the part of the screw that has become pitted. A few strokes of a smooth file, a little adjustment of the contact screw, and you are rewarded with a buzz that can be heard some distance away.

It may be a high tension wire which has touched the exhaust pipe and lost its insulation, or a low tension wire which has chafed against a water pipe, or a loose terminal on the contact breaker. Sometimes the earth return wire gets broken where it is fastened to engine or frame, and then the misfiring will occur intermittently first in one cylinder and then in the other, leading you a pretty dance until you stumble over the cause.

A wipe contact should have ample means of return. The film of oil on the bearings of the second speed shaft and the other resistance between the little brass inset and the frame of the car are almost certain to interfere with a free return, so it is better to provide some other means of return, such as a wire attached to the plate on which the blades are mounted and connected to a nut on the engine or frame. A good plan is to fix a supplementary blade to rub on the centre of the fibre cam so as to make contact on the shaft on which the cam is fixed, and earth the wire from this blade.

If you are sure the ignition is all right and the missing still persists, suspect the carburetter. A partly blocked gasolene pipe will produce the symptoms, so remove the nut which connects the gasolene pipe with carburetter, and try blowing back into the tank with a tire pump. This is the rough and ready method. If it fails, disconnect the pipe altogether, and see if it is clear. The pump will clear it if you can make a joint of some sort, either by removing the valve connection or using a bit of rubber tube, or even wrapping a piece of rubber strip round and wiring it in place. The obstruction may be in the narrow orifice below the needle valve; you can find out by dismantling the carburetter. There may be a particle of dirt in the spray nozzle, which gets carried up occasionally to the tiny hole that delivers the gasolene jet, and occasionally drops back to the bottom of the passage. Clean the jet out thoroughly and wash through the passages with gasolene, when no further trouble should be experienced on the road.

WHITLOCK COOLERS

For 1905.



Experiments are Expensive.

Sometimes they are not only expensive, but fatal. This is especially true in motor car construction. It is, therefore, always on the side of safety and good judgment to adopt those parts which have stood the test of time and have acquired for themselves a reputation based upon actual merit Price is not always the most important consideration.

Therefore, in deciding what cooler you will use for 1905, select one with a reputation.

The Whitlock Cooler has stood the test of time. It has been used for two seasons by the majority of American builders of touring cars. Our experience in this line is now unequalled. Write us about your cooler proposition.

THE WHITLOCK COIL PIPE COMPANY
HARTFORD, - CONNECTICUT

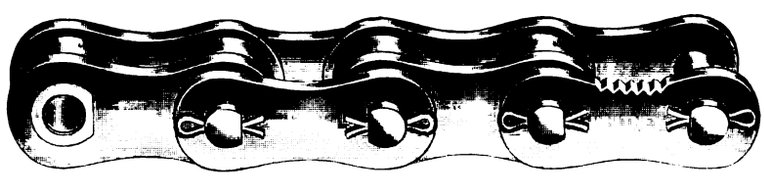
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"WHITNEY" CHAINS

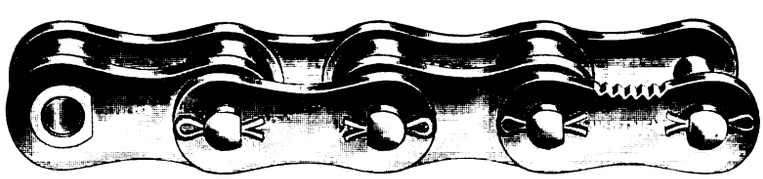
SUGGESTION TO AUTOMOBILE USERS.

Avoid using Cotter Pins a second time, as they are very inexpensive, and new pins are more reliable than old ones. Every time a Cotter Pin is opened and closed it is weakened and eventually it will break.

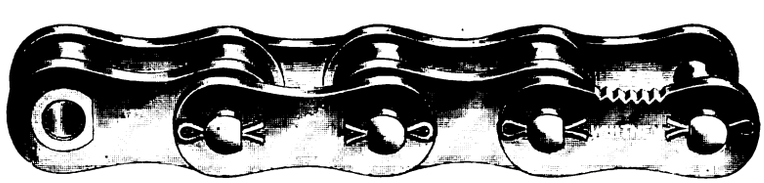
Carry an extra supply of Cotter Pins of all sizes used on your car. The cost would probably not exceed 25 cents.



The Cotter Detachable.



Patent Allowed.



REMARKABLE REPORTS from 1904 Customers.

More IMPROVEMENTS for New Season.

THE WHITNEY MFG. CO., Hartford, Conn.

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Oldsmobile



The Best the Field Affords

By Reason of

1—Oldsmobile motor—ripe product of over twenty years successful experience.

2—Simplicity of mechanical construction. The absence of all gaskets. Cylinders and cylinder heads cast integral. Bearings self-oiling; cam shaft gearing entirely encased.

3—Easy to start—absolute impossibility of "kicking back" in starting.

4—Style, comfort, power, plenty of speed.

5—Light Tonneau Car equipped with tilting steering post, divided front seat, honey-comb radiator, etc.

On the recent Automobile Tour—from New York to St. Louis—the Oldsmobile Tonneau Car easily held its own with cars costing from three to fifteen times as much. It maintained an average speed of twenty miles an hour over the entire trip.

Oldsmobile Standard Runabout, $650.00; Oldsmobile Touring Runabout, $750.00; Oldsmobile Light Tonneau Car, $950.00.

All prices F. O. B. Factory. Catalogue Free. Address

Olds Motor Works,

1332 Jefferson Ave., Detroit, U. S. A.

Members of the Association of Licensed Automobile Manufacturers.

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THE GOODRICH TIRE RECORD

IN THE

GREAT ST. LOUIS TOUR.

THE BEST YET.

79 Goodrich Tires in the run, or nearly one-third of all.

21 more Goodrich Tires than any other make.

Over 50 per cent. of the Goodrich Tires started from New York, Boston, Baltimore and Philadelphia.

Nearly 50 per cent. of our nearest competitors' tires started from Chicago only.

Not a new Goodrich Tire that showed a defect or developed a weak spot or necessitated replacement.

Two old cases which had run 12,000 and 15,000 miles respectively, were replaced a short distance out from St. Louis.

Such a record speaks volumes and gives to the

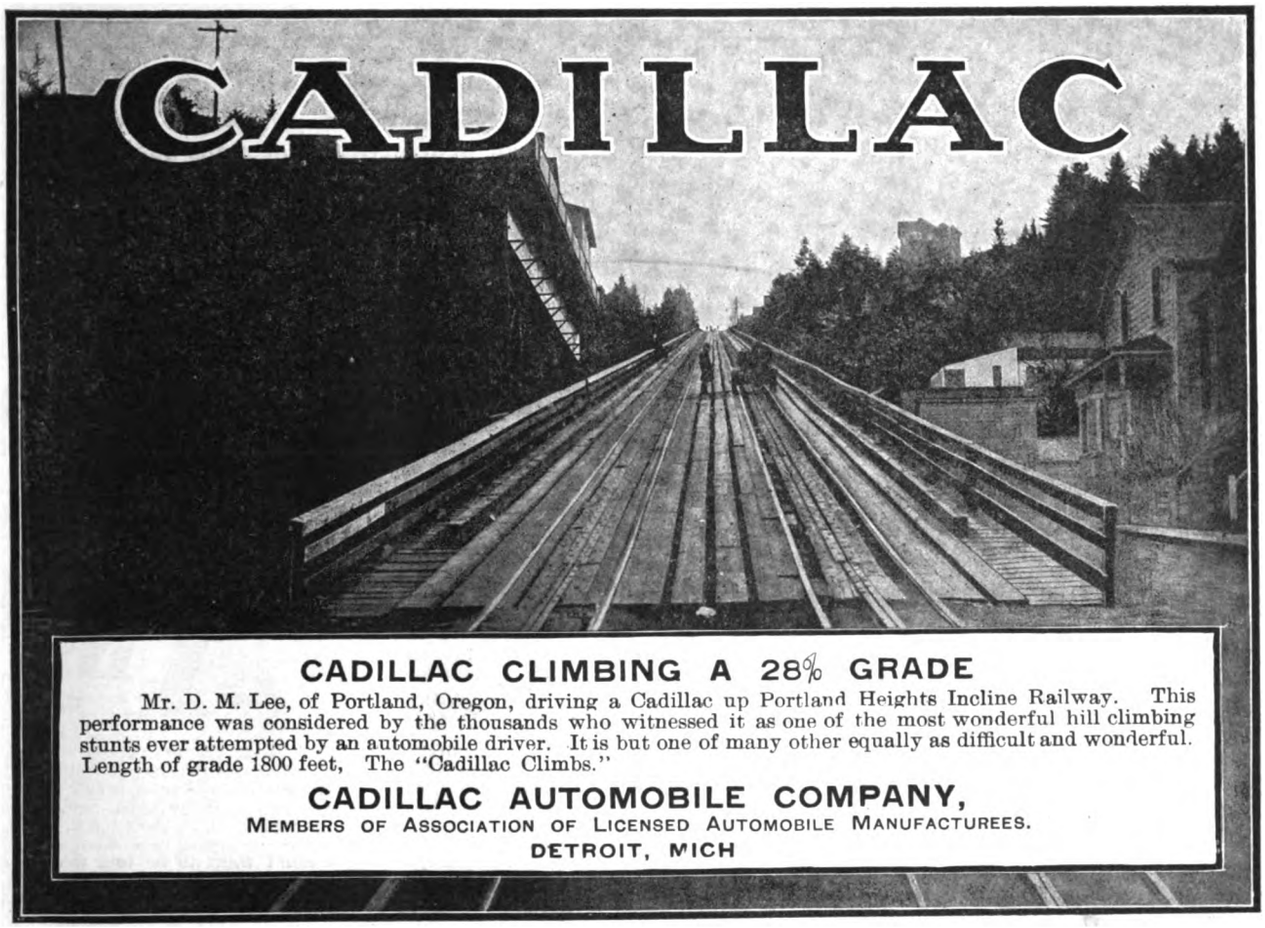
ORIGINAL AMERICAN CLINCHER
The Cleanest Tire Score Ever Achieved in the History of Automobiles.

THE B. F. GOODRICH COMPANY,

AKRON, OHIO.

NEW YORK, 66-68 Reade St. and 1625 Broadway.
BOSTON, 157 Summer St. CLEVELAND, 420 Superior St.
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BUFFALO, 9 W. Huron St. DENVER, 1444 Curtis St.
DETROIT, 80 E. Congress St. SAN FRANCISCO, 392 Mission St.
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CADILLAC CLIMBING A 28% GRADE

Mr. D. M. Lee, of Portland, Oregon, driving a Cadillac up Portland Heights Incline Railway. This performance was considered by the thousands who witnessed it as one of the most wonderful hill climbing stunts ever attempted by an automobile driver. It is but one of many other equally as difficult and wonderful. Length of grade 1800 feet, The "Cadillac Climbs."

CADILLAC AUTOMOBILE COMPANY,
MEMBERS OF ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTUREES.
DETROIT, MICH

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

Unique and Unparalleled

Performance of the Pathfinder

ELMORE

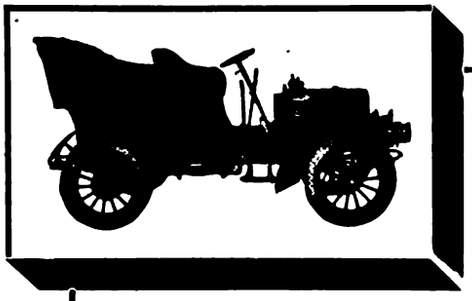


The history of automobiling in America records no more sensational performance than that of the Pathfinder Elmore on the recent trip from New York to St. Louis and return. An ordinary stock car was selected to map out the roads in advance of the endurance run. This tremendous trip of more than 5000 miles over villanous roads was made by the Pathfinder Elmore with a repair bill of only 25 cents, and not a single displacement. Did any car in the endurance run—whether it cost $1000 or $10000—equal this astonishing record of the $850 Elmore?

Send for catalogue and the intensely interesting little book "One Long Jump and Two Short Steps."

THE ELMORE MFG. COMPANY,
1104 AMANDA ST., CLYDE, OHIO.
Members of the Association of Licensed Automobile Manufacturers.

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The YALE $1600

THE YALE WILL MEET THE REQUIREMENTS OF MORE PROSPECTIVE PURCHASERS THAN ANY AUTOMOBILE ON THE MARKET.

You can offer a prospective purchaser more for his money in the Yale than in any other automobile made.

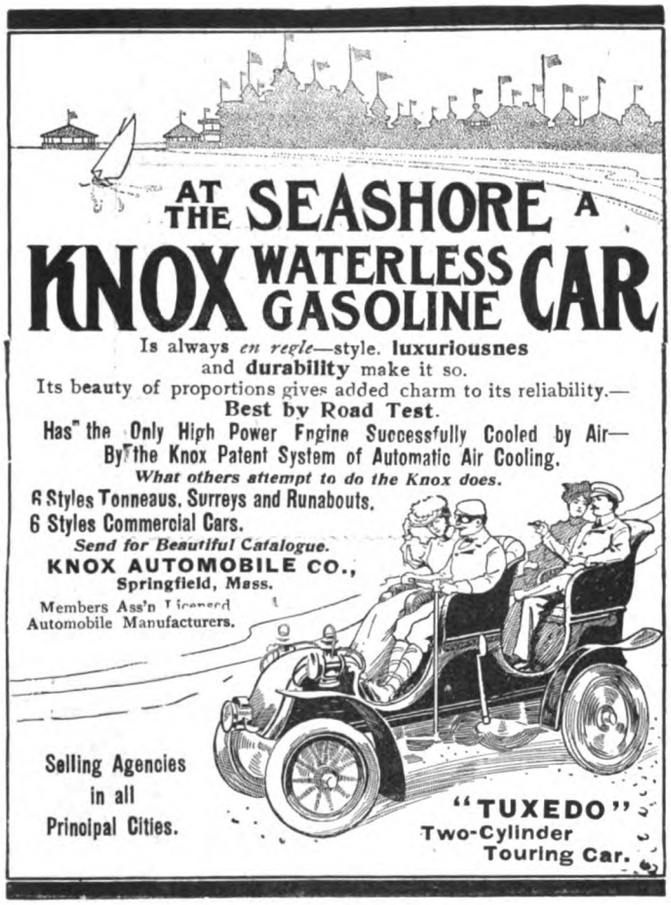
You can offer and guarantee him a dergree of Efficiency, Dependability, Luxury and Simplicity of operation to be found only in other cars costing twice as much.

The Yale provides what nine out of ten automobile purchasers want. A roomy, comfortable-riding, beautiful appearing family touring car with power sufficient to overcome all road difficulties and to develop a rate of speed that will satisfy any desire to "ride fast."

Send for new catologue and investigate the Yale at your first convenience.

THE KIRK MANUFACTURING COMPANY, 950 Oakwood Avenue, TOLEDO, OHIO.

Member Association of Licensed Automobile Manufacturers.



AT THE SEASHORE A KNOX WATERLESS GASOLINE CAR

Is always *en regle*—style. **luxuriousnes** and **durability** make it so.

Its beauty of proportions gives added charm to its reliability.—

Best by Road Test.

Has the Only High Power Engine Successfully Cooled by Air—By the Knox Patent System of Automatic Air Cooling.

What others attempt to do the Knox does.

6 Styles Tonneaus, Surreys and Runabouts.

6 Styles Commercial Cars.

Send for Beautiful Catalogue.

KNOX AUTOMOBILE CO.,
Springfield, Mass.

Members Ass'n Licensed Automobile Manufacturers.

Selling Agencies in all Principal Cities.

"TUXEDO" Two-Cylinder Touring Car.



Auto-talks No. 1

In this, our first "Auto-talk" to the readers of Motor World, we do not intend to discuss speed, control or any of the technicalities of automobiling.

What we do want to talk about this time is *value.*

A sensible man doesn't want to pay any more for a thing than it is worth—he wants a thing to be worth all he pays for it.

He doesn't want to pay a big price just because the maker thinks he can get that price, and he doesn't want to be told that a machine is a *good machine,* when it is really only good for the money.

Naturally he asks "Why cannot the automobile business be put upon a solid footing of *cost* and *worth?*"

It was to answer this question that we started a great automobile plant eight years ago.

And to-day we offer to the public the **Autocar**—*an automobile that is built and sold on a commercial basis*—and the only one.

The Autocar is beyond the experimental, feeling-the-way stage.

It costs what it is worth—it's worth what it costs.

Every part from motor to minutest detail of mechanism is built upon lines that have been demonstrated by test and practice to be correct.

The Autocar has all the features of comfort, convenience and safety found in the highest priced car. Every part is instantly accessible. It is built throughout in the best manner of the best materials and finished in the finest possible style.

The Autocar has a speed of from 3 to 35 miles an hour. Extreme ease of control is attained through an unusually simple arrangement of levers.

The price of the Autocar touring car shown above is $1700—the Autocar runabout $900.

In our next month's talk we will give you more details of the Autocar's construction and performance. In the mean time we ask you to send for our booklet, in which are found addresses of our dealers throughout the country. There is one near you.

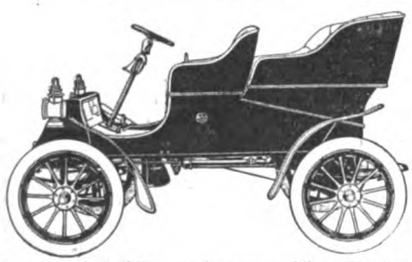
One thing is certain, you cannot afford to buy an automobile without investigating the Autocar.

THE AUTOCAR COMPANY, - Ardmore, Pa.

Member Association Licensed Automobile Manufacturers.

A good name is better than Promises.

THE FORD



has a reputation for reliability, second to no motor car in the world. For the professional or the business man who needs a machine for every day use, THE FORD stands prominent as "The Car of Satisfaction." Verified facts are better than "claims."

10 H. P. Double opposed horizontal motor, cylinder head and water jacket cast in one piece (no packed joints.)

Planetary transmission in oiltight dust proof case.

The perfected construction of the FORD is the result of 15 years actual experience in building gasolene automobiles. DON'T EXPERIMENT—JUST BUY A FORD.

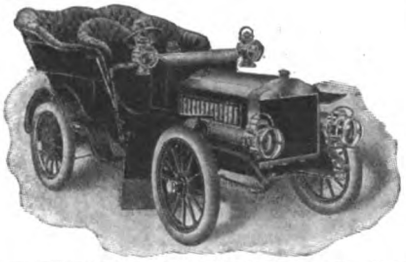
Full particulars and catalogue for theasking.

FORD MOTOR CO., Detroit, Mich.

ENTIRE OUTPUT

1904 THOMAS FLYERS SOLD.

NO CAR HAS BETTER REPUTATION.



The 1905 "FLYER" will shortly be announced.

GET IN LINE IF INTERESTED.

RIDE IN A "THOMAS" OR TAKE "THOMAS" DUST.

E. R. THOMAS MOTOR CO., No. 1210 Niagara St., Buffalo, N. Y.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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The Incomparable White in the RACES at PITTSBURG

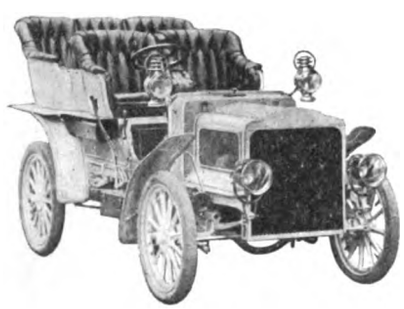
October 1st, 1904.

Four events in which the WHITE was eligible.
(One other for cars under 9 H. P.)

The WHITE carried off THREE FIRSTS and ONE SECOND.

The first in the latter, a five mile open handicap, going to Oldfield by about twenty yards.

"The 15 H. P. WHITE easily made
"obvious the superiority of its type
"over the higher-priced, high-powered
"gasolene machines."



[THE 1905 WHITE.]

WHITE SEWING MACHINE COMPANY, Cleveland, Ohio.



MY DAD SAYS I COULD DO ALL THE FIXIN HIS MORGAN & WRIGHT TIRES NEED

Used on the same car with other brands of tires during the past season, the Morgan & Wright Clincher has clearly demonstrated that it is the toughest, strongest and least troublesome auto tire manufactured.

Actual every-day tests are a safe guide to go by.

"A Tire Triumph" treats of the tire in detail. Sent on request.

MORGAN & WRIGHT, CHICAGO.

NEW YORK DAYTON DETROIT
ST. LOUIS SAN FRANCISCO

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WINTON

Of Direct Concern to Sales Agents.

Do you sell automobiles?

Are you the representative Sales Agent in your territory?

If so, we want you to get together with us on a few logical facts in order that there may be perfect understanding before we announce our manufacturing policy, models, prices, etc., for the 1905 selling season, and before you contract for next year's cars.

We desire to take you right into our confidence, and will avail ourselves of this space to prove conclusively that your greatest opportunity for 1905 is in securing the exclusive right in your territory to sell the products of the house of WINTON.

As Sales Agent you have been—and will continue to be—an important factor in the growth and development of the automobile industry. You are so essential that the industry would not succeed without your earnest and intelligent co-operation.

We desire to be responsible for the further development of your success, and in order that we may in this manner serve you, it is absolutely necessary for us to design and produce the kind of cars sure to be demanded by your prospective purchasers who know what they want, and when they want it, and also what price is a fair one to pay.

You dare not make a mistake in your selection of cars. You must handle better cars and at more attractive prices than your competitors, if you would continue supreme in your territory.

Fully appreciating your situation in the premises, we recognize that our argument puts it right up to us to make only that kind of cars which will be most in demand by automobilists of the "advanced class." This we are going to do, and as a consequence we will expect the very best sales representation in every city and district.

During the past season we have carefully studied the tastes and desires of the most discriminating automobilists. We know just what they want for 1905. We are going to produce it in more than one model. Fact is, the Sales Agent who controls WINTON products will not need to consider much else in order to have a complete line of gasoline cars.

This limited space makes it impossible to give you a complete outline of our manufacturing policy in a single issue, but we ask that you watch our announcements during the next few weeks that you may learn of our policy in detail for the coming season. If this "continued in our next" plan is too slow, get into immediate communication with our Sales Department. The result may be mutually profitable.

In the meanwhile, and until you know just what may be expected from the house of WINTON, avoid making definite promises to any manufacturer.

THE WINTON MOTOR CARRIAGE CO.

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

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The Best Automobile Motors

AND

Automobile Charging Machines

ARE MADE BY

THE ELWELL-PARKER ELECTRIC CO,

CLEVELAND, O.

"I have now driven 3300 miles, and the little troubles that I have had are too small to mention; it is certainly wonderful how she keeps going mile after mile with no trouble whatever. We have taken some very long runs."

(From a driver of a four-cylinder LOCOMOBILE, who is no novice at automobiling.)

NOTE that LOCOMOBILE Cars can be seen and tried at any Locomobile Branch Office. Front Vertical Motors exclusively.

PRICE, $2,100 Up.

The *Locomobile* Company of America,

BRIDGEPORT, CONN.

BRANCHES: New York, Broadway and 76th St.; Philadelphia, 249 North Broad St.; Chicago, 1354 Michigan Ave.; Boston, 15 Berkeley St.

Member Association of Licensed Automobile Manufacturers.

THE M. SEWARD & SON CO.

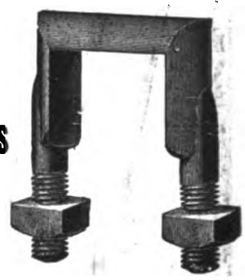
NEW HAVEN, CONN.



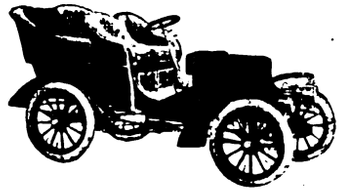
MANUFACTURERS OF

CARRIAGE HARDWARE AND Special Drop Forgings FOR Automobiles

AND OTHER WORK.



We are prepared to make estimates from drawings or models and guarantee first-class work.



A PREMIER Customer Writes as Follows:

"On a recent road trip of 40 miles in my car, one of the plugs on the end cylinder cracked and short circuited. Finding that I had forgotten my extra plugs and that I could not repair the broken one, I removed it from the cylinder head and came home, the last 12 miles on 3 cylinders, in 34 minutes, and with apparently no effort on the engine part, and the car running as smoothly as ever except with a slight loss of power and speed.

"Four cylinders are correct and economical on car, wearing parts and—last, but not least—passengers."

The **PREMIER**, the **FASTEST** air cooled car in America. The car which is saleable the year round, and which can be used the year round.

WE ARE OPEN TO TALK 1905 BUSINESS!

Premier Motor Mfg. Co., Indianapolis, Ind.

Darracq Motor Cars

SET THE FASHION TO THE WORLD

Speed, Silence, Comfort.

(MICHELIN TIRES USED.)

AMERICAN DARRACQ AUTOMOBILE COMPANY,

Controlled by F. A. LA ROCHE COMPANY,

652 Hudson St. and 147 W. 38th St., New York.

PHILADELPHIA, 317-319 North Broad St.

Aluminum Bodies

of the

HIGHEST GRADE.

TOPS, FENDERS and HOODS. Painting, Repairing and Remodeling.

Chassis Lengthened and Side Door Entrances a Specialty.

MOORE & MUNGER CO., 602 West 52nd St., New York City.

TELEPHONE, 4425 Columbus.

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On G & J Thread Fabric Tires

PEERLESS CAR, driven by BARNEY OLDFIELD,

At Pittsburg, October 1,

makes a new WORLD'S RECORD for 24 H. P. Touring Car—10 miles, 10 min. 50 1-5 sec.

PREMIER COMET, driven by CARL FISHER,

At Chicago, October 1,

makes a new WORLD'S RECORD for middle weight cars—2 miles, 2 min. 2 3-5 sec.

Why the New G & J Tire is Fast.

The fabric used in this tire is woven with very strong threads running in one direction, with very light, soft cross threads about an inch apart. In building the tire, the several layers of fabric are placed on the bias, with rubber between each and every layer. The cross threads are made as light and as soft as possible, as their whole purpose is to hold the fabric in proper position until the tire is built. These cross threads have no strength whatever. The rubber between each layer forms a cell about each of the strong threads in such a way that when the tire is completed there is not one thread touching, or in any way chafing against any other thread, and each and every thread bears its full amount of the inflation strain. Where what is termed "square woven fabric" is used, the threads in each direction being of equal strength, there must necessarily be considerable friction at each point where one thread crosses the other, and in fast driving this constant friction develops considerable heat. With our new construction, there is no heat whatever developed except what is generated from contact between the rubber surface of the tire and the road; there is no internal heat. The heating of tires has been the most serious problem in tire construction. It has been one point which tire makers have heretofore been unable to overcome. The heating of the tires causes the rubber to degenerate, and to eventually disintegrate.

Our new tire is far speedier than any tire ever before used, and the exhaustive tests which we have made have proven that the tires are more durable than any ever before used. We feel that this new construction means a long stride in the direction of reducing the trouble and expense of tire equipment to lowest possible point.

Trade Mark.

G & J

G & J TIRE CO.

Main Office and Factory,

INDIANAPOLIS, IND.

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We Do Not Build Racing Machines

BUT

At Del Monte, California, on August 26th and 27th. a regular stock

Rambler

Won the 5-mile race for light touring cars in 8:16¾.

Won the Australian pursuit race for cars costing $2500 or less in 8¾ miles; time, 17:49.

Won the 5-mile race for cars costing $2500 or less, in 6:15¾.

Won the 5-mile race for cars rated at 16 horse power or less, in 6:01.

Won the hill-climbing contest for cars costing between $1000 and $2500, on a course 1⅝ miles long, with grades from 2 to 18 per cent., in 3:04.

Rambler

machines entered in eight races and received

Five First and Two Second Prizes.

SUMMARY:

Five miles, for light touring cars:

H. COUSINS,	RAMBLER,	FIRST
Cuyler Lee,	Cadillac,	Second

Time, 8:16¾.

Australian Pursuit Race, for cars costing $2,500 or less:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. Grothe,	White,	Second
W. K. Cowan,	RAMBLER,	Third

Distance, 8¾ miles.
Time, 17:49.

Hill climbing contest for cars costing from $1,000 to $2,500:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. K. Cowan,	RAMBLER,	Second
W. Grothe,	White,	Third

Distance, 1⅝ miles.
Grade, 2 to 18 per cent.
Time, 3:04.

Five miles, for cars costing $2,500 or less:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. Grothe,	White,	Second
W. K. Cowan,	RAMBLER,	Third
E. E. Russel,	Thomas,	Fourth

Time, 6:15¾.

Five-mile race for cars not over 16 horsepower:

W. E. SAUNDERS,	RAMBLER,	FIRST
W. K. Cowan,	RAMBLER,	Second

Time, 6:01..

Hill climbing contest for cars costing from $2,000 to $4,000:

			Time.
Bert Dingley,	Pope-Toledo,	FIRST	2:43
W. E. SAUNDERS,	RAMBLER,	Second	2:47⅘
H. M. Chambers,	Great Arrow,	Third	3:25⅘
W. K. Cowan,	RAMBLER,	Fourth	3:35

Distance, 1⅝ miles.
Grade, 2 to 18 per cent.

Why not write for our illustrated motor book; it explains why the

Rambler

excels the high-price cars; it is an American machine, not a copy, and can hold its own in any company.

"Our Little History" is entertaining; it is also free for the asking.

THOMAS B. JEFFERY & COMPANY,

BRANCH HOUSES: { BOSTON, 145 Columbus Avenue.
CHICAGO 302-304 Wabash Avenue.
PHILADELPHIA, 242 North Broad Street.

Kenosha, Wisconsin.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, October 6, 1904. No. 2

FISK SUCCEEDS FISK

Reorganization Follows Acceptance of Assignee's Offer—Good Will and Prosperity Abound.

On Saturday last The Fisk Rubber Co., Chicopee, Mass., a corporation of that State, took over the Fisk Rubber Co., of the same place. Harry T. Dunn, general manager of the old company, is president of the new one, and Alfred N. Mayo, treasurer.

Mr. Mayo is the same who acted as assignee of the Fisk Rubber Co., of which he was the largest creditor. The slight change of name and the new order of things signifies that his generous offer to the creditors has been accepted, as was expected would prove the case, and that the company is again on its feet. The discharge of the assignee is practically the only formality to be observed.

The capital stock of the new corporation is $600,000, of which $300,000 is 6 per cent cumulative preferred, both as to dividends and assets in case of liquidation. Stockholders of the Fisk Rubber Co. are to receive in exchange for their shares 100 per cent par value in the preferred stock and 100 per cent par value of the common stock of the new corporation. Both the preferred and the common stock have equal voting power. All creditors to the amount of $100 or more will be paid 5 per cent in cash and 100 per cent in stock of the new company; all claims of less than $100 will be paid in cash. Fifty thousand dollars, par value, of the preferred stock is to be retired annually, or the whole or any part of it may be retired at any time at par and 6 per cent interest.

It was on October 13, 1903, almost one year ago, that the Fisk Rubber Co. made its assignment, which, strangely enough, was due directly to an excess of prosperity. It was doing too much business for its capital. It was one of those embarrassments to which it would be shameful to apply the term "failure." Everything about it was clean, apparent and above board, and practically every creditor was sympathetic and well disposed. This feeling was cemented by the liberal offer of settlement made by the assignee, the text of which is as hereinbefore given. It assures the creditors more than 100 cents on the dollar.

The new company thus starts with ample capital and a huge goodwill account, and the prosperity which smiled on its predecessor also has been inherited, and with proper bulwarks. Evidence of it is apparent to all who visit Chicopee Falls. There a big addition to the plant, a new machine shop and a new office building are all in course of erection, and so far advanced that they doubtless will be completed by November 1.

To Arrange Show Preliminaries.

In order that the members attending may be in New York at the time of the Vanderbilt Cup race, the October meeting was not held on the first Tuesday of the month, as usual, but was postponed until Friday of this week. On the same day the application blanks for spaces at the New York and Chicago shows will be sent out, and all applications must be in the hands of the show committee before October 31, on which day the allotment of spaces will be made by S. A. Miles, of the N. A. A. M.; Frank Sanger, of the Madison Square Garden Company, and General George Moore Smith, of the Automobile Club of America. A committee of the Motor and Accessory Manufacturers will be on hand at the time of the allotment to decide where the 10,000 square feet of space assigned to them will be located. The allotment of spaces for the Chicago show will be made on November 1 by S. A. Miles alone.

Not Likely to Reduce Rates.

From a chance remark let fall by a member of the railway classification committee, it does not seem probable that the efforts to obtain a reduction of the freight rates on automobiles will avail anything. The committee met with the freight committee of the N. A. A. M. at the classification committee's rooms in New York on Tuesday last, and presented their argument and request for relief. It was after this meeting that the railroad man in question let fall the remark referred to; it was distinctly unfavorable.

WILL REFUND ROYALTIES

Peculiar Situation Regarding Steering Knuckle Patent That Inspires the Refundment.

A peculiar situation has arisen in connection with one of the most interesting patents on which royalties are collected from automobile and parts manufacturers—that on the Elliott steering knuckle.

Since early in 1902 the Electric Vehicle Co. has been collecting royalties from parts makers and others on this device, and now it has been suddenly discovered that the patent monopoly on it either expired more than a year ago, or else will expire this month, which is wholly unexpected, as it was supposed that it had the renewal term yet to run.

An interesting phase of the matter is that the Electric Vehicle Co. is the one that has made the discovery, and is taking the initiative in straightening out matters. It has been collecting royalties from eighteen different concerns, and if it is determined that the patent rights on the device expired a year ago, it will take the initiative in making the proper adjustment under the circumstances.

The facts were brought to light because of rumors that reached the Electric Vehicle Co. concerning the discovery of a technicality that terminated the life of the patent having been made by a lawyer retained by one of the concerns which were being urged into line under the patent.

The patent rights on the steering knuckle in question were granted by the United States to Sterling Elliott on December 16, 1890. The application for the grant was filed on July 16, 1888. Fourteen months after the filing of the application in the United States, on September 23, 1889, an application was filed for a patent in Great Britain by Alfred G. Brookes, of London, acting under communication from Sterling Elliott here. Although the British application was filed fourteen months later than that in the United States, the British patent was issued on October 28, 1890, six weeks before the patent was issued at Washington.

The technicality comes in under Section

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4,887 of the Revised Statutes of the United States, which says:

"But every patent granted for an invention which has been previously patented in a foreign country shall be so limited as to expire at the same time with the foreign patent," etc.

The law respecting the effect of foreign patents upon the life of a United States patent was changed by act of Congress on March 3, 1897, and went into effect on January 1, 1898, and provides that if an inventor makes application within the United States within seven months from the date of an application for a foreign patent on the same invention, then the expiration of the foreign patent will have no effect upon his United States patent. A further act of Congress, March 3, 1903, changed the seven months' period to twelve months. Neither of these amendments of the law has a bearing on the case, as the amendments are not retroactive. The law prior to amendment applied to the Elliott patent, and the amendments are cited merely to explain away confusion on the part of those who know the law as it is at present.

Upon hearing the rumors concerning the patent the Electric Vehicle Co., which acquired the exclusive rights to it in 1899, set its counsel to work investigating. The facts were found to be as stated. The only question still unsettled is whether the British patent expired fourteen years after the date of application for it—that is, on September 23, 1903—or does not expire until fourteen years after the date it was granted, which will be October 28, 1904. If the former is the case, the Electric Vehicle Co. will at once take the action necessary under the conditions, it being plain in such event that royalties have been collected for a year longer than they legally could be.

The Electric Vehicle Co. did not know about the British patent because it had nothing to do with the procuring of the Elliott patent, as the title of the Elliott patent is in another company and the Electric Vehicle Co. only had the exclusive rights to the United States patent for motor vehicles. The British patent was not issued to Elliott, but to Alfred George Brookes.

The Elliott steering knuckle patent is not to be confused with the Columbia steering mechanism, under the patent for which suits are now pending against foreign makers. The Elliott patent covers the double forked ends of the axle with a three-armed knuckle supported in the forked ends.

The royalty collected under the patent was $1.50 on each vehicle.

This discovery will have no effect whatever on the suit of the Electric Vehicle Co. for an accounting of royalties which is now pending against the Weston-Mott Co.

The Austin Automobile Co., Grand Rapids, Mich., will have a four-cylinder car the 1905 trade. Work on it is already nearing completion; it will have side entrances, of course.

TO TUTOR NEW YORKERS

Y. M. C. A. in Metropolis to Teach Young Ideas, and Old Ones, How to Motor.

A class for instruction in automobile engineering is to be opened at the West Side Auditorium of the Young Men's Christian Association, in Fifty-seventh street, near Broadway, New York, next week. In this the New York organization is not exactly following the lead of the Boston Y. M. C. A., for the instruction in the metropolis is to bear more directly on practical ends than the courses introduced in other cities. The New York school will invite as pupils those desirous of becoming professional chauffeurs, and also autotmobile owners who seek a thorough working knowledge of their cars.

In this move the Y. M. C. A. has the cordial support of the Automobile Club of America, with the officials of which Harrison S. Colburn, the educational director of the West Side Y. M. C. A., consulted before deciding to launch the project. Mr. Colburn consulted also with the managers of a number of West Side garages, and satisfied himself that there is a demand for competent chauffeurs who can be recommended as of good character. An employment agency for chauffeurs will be conducted in connection with the school.

There are to be three separate courses. The first is to be a series of lectures for men, either owners or prospective owners of automobiles, who wish to become generally intelligent about motor cars. It has been arranged that there is to be one of these lectures each week for a term of six months. Dr. Charles Edward Luke, director of the experimental engineering department of Columbia University, is to conduct these lectures, and will be assisted by several specialists.

Professor Amasa Trowbridge, adjunct professor of mechanical engineering at Columbia, is to be in charge of the class of designing and draughting automobiles. His classes will meet in the evening twice a week for six months.

The third class is for aspiring chauffeurs. The term for this class is three months, with both day and night sessions.

The instruction will be chiefly in the construction and operation of steam, gasolene and electric machines. The classes will be divided into groups of twelve or fifteen men each for work in the construction branch of the course, but in the instruction in operation these groups will be further subdivided into groups of only three or four. Instruction will be given for the present in the garage of the Victor Automobile Storage Co., in Fifty-fifth street, between Sixth and Seventh avenues, but the pupils will be taken to all of the principal garages in turn, where special types of machines are to be seen.

The practical indoor and outdoor work will be conducted by Clarence Bowne Brokaw.

The members of the advisory committee are Winthrop E. Scarritt, president of the Automobile Club of America; former President A. R. Shattuck, S. A. Miles, general manager of the National Association of Automobile Manufacturers; Professor Frederick R. Hutton, dean of the department of engineering of Columbia; E. T. Birdsall and Windsor T. White, president of the N. A. A. M.

Smith Gets Stamping Works.

Although before the deal was concluded a number of prints had the A. O. Smith Co., of Milwaukee, in possession of the Federal Mfg. Co.'s Smith stamping works at that point, it was not until September 14 that the transfer of the property was formally concluded. It is therefore now entirely separate and distinct from the Federal interests, and is being operated by the Smith Co., of which the officers are: A. O. Smith, president; C. G. Forster, vice-president, and C. F. Hase, secretary-treasurer.

The Smith factory, as is well known, is the largest automobile parts making establishment in the country. It is peculiarly well equipped and adapted for its work. The products of the factory are as follows: Standard and special pressed steel frames, complete rear axles with chain and bevel gear drive, complete front axles, tubular and forged; malleable and pressed steel hubs, wheel and lever steering gears, cone clutches, change gears, connecting rods, machined forgings, steel rims, steering wheels, spark and throttle levers and brake parts.

Guarantee Covers Fire and Evaporation.

The Van Husan & Parr Co., Detroit, Mich., who are marketing the Snell hydraulic system of gasolene storage, accompany their claims with a guarantee that is out of the usual. The warranty provides against fire or explosion by lightning, electric current or other fire, against sediment or water, against sputtering or spilling of oil, and against evaporation, 'whether left one day or ten years." An always visible gauge with which the device is equipped also measures not only the exact quantity, but the exact gravity of the gasolene. It is even claimed that results prove a saving of from 3 to 10 cents a gallon.

New Concern in Elmira.

The Chemung Automobile Co., Elmira, N. Y., is being incorporated this week by Charles Ufford, Clarence Sayles and Fred Rees, to do a sales, repair, rental and storage business in that city. The agencies for the Winton, Columbia, Pierce, Peerless and Oldsmobile already have been obtained, thus assuring an auspicious beginning. Ground will be broken next week for its new building, at Church and Baldwin streets. Mr. Sayles will be the active manager of the concern.

Victor Scruggs has began the erection at Green Bay, Wis., of an automobile salesroom and garage. The building will be 120x35 feet.

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IN THE KALEIDOSCOPE

Trade and Personal Changes Being Made by Men and Concerns.

Walter O. Adams, formerly treasurer and manager of the Crest Mfg. Co., Cambridgeport, Mass., has gone with the Ford Motor Co. as assistant to James E. Couzens.

Norman W. Church, the well-known Los Angeles (Cal.) dealer, is now in the East renewing old accounts and taking on some new ones.

H. T. Dunn, the new president of The Fisk Rubber Co., left last week for the Pacific Coast, a business visit that he makes annually.

Fred Tone, formerly of the Rambler staff and later with the Jonas Automobile Co., of Milwaukee, will shortly assume the duties of sales manager of the Marion Motor Car Co., of Indianapolis.

The Packard Motor Car Co. are to open a Detroit branch store about November 1. It will be in charge of J. H. Brady, long one of William E. Metzger's brightest and best-liked assistants.

That Ray Owen, of New York, is to be sales manager of the Reo Motor Co., R. E. Olds's new company, is now stated as an accomplished fact. Reports to this effect have been current for several weeks.

C. W. Shanks, sales manager of the Winton Motor Carriage Co., left on Tuesday night for a five or six weeks' business trip to the Pacific Coast. He will visit not only San Francisco but Los Angeles, Denver, Omaha, etc.

F. E. Castle, of Gray & Davis, who recently took up residence in Detroit and who is making that city his headquarters, was burned out of house and home on Sunday last. Castle says it was the only illumination he has seen recently that compares favorably with that given by a Gray & Davis lamp.

Realizing finally the Scriptural injunction that it is not well for man to live alone, Mr. James Joyce, the former superintendent and present sales manager of the Electric Vehicle Co., last week took unto himself a partner. The happy event occurred at the Heublein, Hartford, Conn., and the present Mrs. Joyce was Mrs. Annie M. Strickland.

Now the "Reo" and Building Fast.

After a brief existence the R. E. Olds Co., the $1,000,000 Lansing, Mich., automobile company organized some weeks ago, has passed away. In its place appears the "Reo Car Co.," the name of which is a neat play on the initials of Ransom E. Olds, the founder and leading spirit of the concern. The change is, of course, one of name only and was made to avoid possible confusion with the name "Oldsmobile" or "Olds Motor Works," with both of which the name of R. E. Olds was so long associated.

The new company is making amazing progress. Although ground was broken for its immense plant at Lansing, Mich., but three weeks ago, the first story is already up and the window framing in place.

Ripper Disappears; Creditors Mourn.

Creditors of Victor E. Ripper, of the Ripper Motor Carriage Co., of Buffalo, N. Y., are mourning his absence and endeavoring to locate him. He departed from Buffalo suddenly about ten days ago "for parts unknown," leaving his affairs in a very much muddled condition. His creditors go so far as to assert that, in addition to obtaining goods under false pretences, he forged notes.

Ripper, who operated four stores in Buffalo, added the sale of automobiles to his bicycle business last spring. It is claimed that he bought goods extensively on credit and then sold them at cut prices and made away with the money. His list of creditors includes two banks, many local business houses and several professional men, and the total liabilities will exceed $50,000.

Morse Starts with Big Money.

A company of unusual strength has been formed at Springfield, Mass., under the title of the Morse Automobile Co., to manufacture automobiles. Articles of incorporation have been filed, the authorized capital being $250,000. Of this amount $155,000 has been subscribed. Sewell Morse, of Detroit, Mich., is the president, the other officers being: Vice-president, F. H. Young; treasurer, J. Frank Drake; clerk, A. E. Snow. Other incorporators are Edward H. Cullen, Charles L. Hoyt, J. Douglas Law and Clinton Gowdy, all of Springfield.

The concern will manufacture on a large scale automobiles built under patents owned by President Morse.

What McClintock will Manufacture.

D. L. McClintock, of Fort Wayne, Ind., is the leading spirit in the McClintock Engine & Automobile Co. of Kansas City, the incorporation of which, with $375,000, is noted elsewhere. The concern is looking for a site to build, and expect to start work at once. A car invented by McClintock will be made. Its salient feature is described as "an adjustment by which the propelling power can be attached to either the front or rear axle." The company also proposes to turn out "non-exhaust steam and gasolene machines."

Du Cros Here to Sell Panhards.

George Du Cros, one of the big men of the English Dunlop Tire Co., who has contracted for one-half of the Panhard output, arrived in New York on the Campania on Saturday last. He is fully authorized by both the parent and American Panhard houses to appoint agents and make sales in this country, which is the mission of his visit.

Winton Delays Announcement.

The Winton models and prices for 1905, regarding which some little curiosity exists, will not be announced until November 1. It is trade gossip that they will incorporate at least one big surprise.

THE WEEK'S INCORPORATIONS

Unusual Number of New Companies "Take Out Their Papers" and Prepare for Business.

Chicago, Ill.—Chicago Automobile Mfg. Co., under Illinois laws, with $50,000 capital, to manufacture vehicles and boats. Incorporators: M. F. Moss, M. E. Mogg and W. A. Whirlwall.

Kansas City, Mo.—McClintock Automobile and Engine Co., under Missouri laws, with $375,000 capital. Directors: D. L. McClintock, of Fort Wayne, Ind.; Hiram Landrus, Edwin Bond and Fred. J. Close.

Chicopee, Mass.—The Fisk Rubber Co., city of Chicopee and city of Chicago, under Massachusetts laws, with $600,000 capital. Officers: President, Harry T. Dunn, Springfield; treasurer, Alfred N. Mayo, Springfield.

Springfield, Mass.—Rogers Automobile Co., under Massachusetts laws, to manufacture automobiles. Incorporators: W. H. Rogers, J. P. Hilliard, E. G. Hubbell, W. H. Sherman, C. M. Woodward and Lewis F. Ivers.

Bristol, Conn.—The Law Automobile Corporation, under Connecticut laws, with $50,000 capital, to manufacture automobiles. Incorporators: Fred. A. Law, of Hartford, and Frederick N. Manross and Epaphroditus Peck, of Bristol.

New York, N. Y.—The American Non-Metallic Storage Battery Co., under New York laws, with $25,000 capital; to store and charge automobiles and deal in batteries. Incorporators: G. K. Hartung, C. F. Schub and G. J. Wohttmann, all of New York City.

Springfield, Mass.—Morse Automobile Co., under Massachusetts laws, with $250,000 capital. Incorporators: Sewall Morse, of Detroit, Mich.; F. H. Young, J. F. Drake, A. E. Snow, E. H. Cullen, C. L. Hoyt, J. D. Law and Clinton Gowdy, all of Springfield.

Portland, Ore.—Oregon Automobile Despatch Co., under Oregon laws, with $30,000 capital, to transport freight and passengers, deal in automobiles, etc. Incorporators: H. W. Goddard, C. A. Bell and A. C. McIntosh.

Minneapolis, Minn.—The Minneapolis Automobile Co., under Minnesota laws, with $10,000 capital, to do a retail and wholesale automobile business. Incorporators: E. G. Timme, L. S. French and A. E. Paegel.

Slight Shrinkage of Exports.

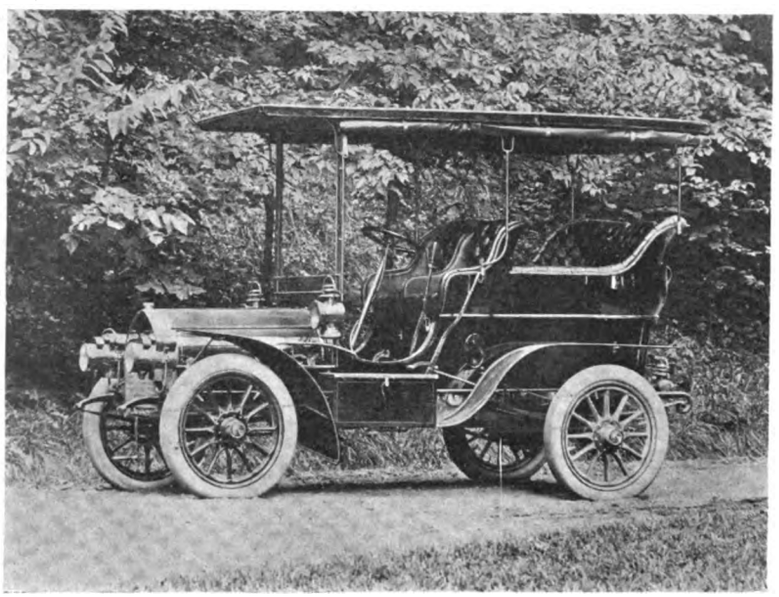
For the first time in many months, the exports of automobiles and parts show a loss. It is a very slight one, however, and the figures themselves are quite up to the average of previous months, being $168,303 for August, 1904, as against $171,132 for the same month of 1903. For the eight months of the fiscal year ending with August, the figures are $1,322,499, as compared with $1,049,311 for the same period a year ago.

G & J to Open in Detroit.

The G & J Tire Co. are making ready to establish a branch in Detroit.

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EFFICIENCY

in its highest degree can be obtained only through the employment of devices which enable the automobilist to take advantage of existing conditions.

The HAYNES 3 SPEED 1 LEVER CONTROL Meets Every Road Condition.

1st. Gear for starting and mountain climbing.

2d. Gear for hills, sand and bad roads.

3d. Gear for good roads and moderate grades.

RESULT: Never less than 80 per cent. EFFICIENCY of motor. All obtained by 1 LEVER.

The Catalog Tells Why. Write for it Today.

THE HAYNES-APPERSON CO., Kokomo, Ind., U. S. A.

BRANCHES: New York, No. 1713 Broadway. Chicago, No. 1420 Michigan Ave. AGENCIES IN PRINCIPAL CITIES.

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Increases Speed. Overcomes Punctures.

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FISK RUBBER COMPANY,

CHICOPEE FALLS, MASS.

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The Test That Tells.

Nowhere has it been more conclusively demonstrated that a business cannot be prosperous or even successful unless the goods it turns out are satisfactory than in the automobile industry. Looking down the long line of failures, the almost invariable cause has been the impracticality or unreliability of the car produced. It did not give satisfaction. The user into whose hands it fell paid good money for a car that was inefficient and imperfect. It might possess the elements of success, but if so it was in a crude form, and further experimentation and work were required to bring it to the stage where it could be properly marketed.

It is pretty safe to say that no concern was wound up solely because of lack of capital. That may have been the most obvious cause of withdrawal, but back of it, and overshadowing it, was some fatal defect in the car itself. It frequently happened that the money gave out before the car was perfected, but it had been brought to such a promising stage that fresh capital was subscribed and the work prosecuted with renewed vigor. Then one of two things happened—either the car became a success and still lives, or—a more frequent occurrence—the money was spent and the car still stood on the brink of success, in which case the choice was presented of obtaining more capital or quitting the field.

There are cars to-day that are successful because they give satisfaction to their users. There are others that fall short of this, and which, on that score alone, cannot truly be termed successful. The latter are the ones that hang in the scale; they must be made to give satisfaction or they will be weighed and found wanting.

By this time both trade and public understand pretty well that the most costly car is the one that gives the most trouble. First cost is really a small item. It is overshadowed by maintenance cost, and neither maker, dealer or user can afford to overlook the fact. These three widely differing and sometimes antagonistic classes have one interest in common—the production, the sale or the use of cars that will give the best service with the least trouble. The ones which get closest to this will be the ones to survive and to achieve the greatest success.

Conservatism; the Why and the How.

What every manufacturer desires is that his car shall give the maximum of efficiency with the minimum of trouble.

How to secure this condition of affairs is a task the herculean character of which is only too well understood by those who have grappled with it. Conservatism becomes a creed with most makers, because they know by bitter experience that every constructional change made in their cars means trouble at first. It makes no difference how well designed or made the part may be, or to what lengthy tests it has been put on experimental cars; the instant it finds a place on the regular models it begins to go wrong. It is, of course, only a question of a short time when the cause of the trouble will be discovered and a remedy applied; but no amount of foresight seems to avail to enable the maker to apply the much needed ounce of prevention.

This reluctance to make a change in any part that has been long used and is giving entire satisfaction is well illustrated by a recent happening. The maker of a certain device was for a long time unable to obtain a hearing from a manufacturer whom he desired to interest in his goods. After a considerable delay he did prevail upon the manufacturer to listen to him. But no amount of assertion regarding the alleged superiority of the article in question had any weight with the maker. The article he was using gave pretty fair satisfaction, and there was no reason why it should be discarded. Of course, he was always on the lookout for something better; but he had been fooled so many times, had tried so many devices that in practice failed utterly to bear out the claims made on their behalf, that he had made up his mind not to touch anything unless it could be demonstrated to him that it was a superior and practical article.

Finding that the land lay in this direction the would-be seller tried a new tack. Demonstration was just his line, he declared, and nothing would give him more pleasure than to prove the superiority of his device. He prevailed on the maker to permit a trial to be made, and was able to show that it was markedly superior to the device used on the maker's cars. The maker was surprised. He frankly admitted this, and said that he was much impressed by the result of the test. But he added that nothing would convince him but a year's trial on his cars. He would stick to the device he was already using, for he knew just exactly what it was doing, but he would order a hundred or so of the alleged superior devices and fit them to his cars. Then, after a year's running, he would be in a position to know exactly what to do.

The occurrence strikingly illustrates the conservatism referred to. Desirous as the maker is to improve his car either in detail or in whole, he is deterred from taking steps to this end by fear of making a mistake. There are many pitfalls spread for his feet, and he has learned to be wary.

The Real Value of Registration.

The Motor World desires to confess a grievous oversight in editorially dealing with the fallacy of the numbering system last week.

It was then implied that the only earthly value of the numbered tag was in that it served as a basis for extorting an extra tax from automobilists.

As a matter of fact, its chief value, or at any rate the chief result of the system, is the continuous stream of circulars, catalogues, samples and the like that flow in on the de-

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fenseless car owner. Only those who have paid good coin of the realm for the gracious "privileges" of registering their vehicles and tying on a number know the Niagaralike nature of the stream; it never ceases.

The numbering system may, therefore, be said to promote trade and the sale of postage stamps, to say nothing of the petty "graft" which the sale of the victims' names and addresses affords.

Demonstrations of Economy.

There can be no lessening of interest in such an important question as the fuel consumption of gasolene and steam cars. Rather must it be viewed with increasing attention and cut more and more figure as the use of the motor vehicle is extended and the utilitarian aspect of its various functions assumes a greater prominence.

Too little attention has hitherto been given to the matter, owing, perhaps, to the multiplicity of other and less dry features of interest to motorists. What has been done has, with the notable exception of French effort in this direction, partaken to a considerable extent of an incidental, even an accidental, nature. The two instances in which consumption tests of a sort were conducted in this country were in so-called one hundred miles "reliability contests" held several years ago on Long Island and in this State, respectively. In the former, being on a comparatively level course, the better showing was made. The palm for economy in fuel consumption was borne by a runabout with a record of just over three gallons of gasolene for the one hundred miles, while a four cylinder touring car required twelve gallons to cover the same distance. There is nothing extraordinary in these figures, and they are quite cast in the shade by the showing made in French trials; but the latter were consumption trials pure and simple, where everything was subordinated to the task of getting a vehicle through on the least possible consumption of fuel, besides being, as a rule, confined largely to heavy transport wagons, many of which made use of heavy fuels. The marvellous nature of the performances thus accomplished is best indicated by alluding to the premier showing—that of a four and one-half ton wagon, which came through with a gasolene consumption of 0.0489 litre per ton weight and kilometre distance. Midway between this and the Long Island performance referred to is the work of a 10 horsepower British car in one of the British hundred miles non-stop trials, viz., one hundred miles on a consumption of only 1.68 gallons of gasolene.

Both of these performances, however, were special in character and made for the sole purpose of recording a remarkable fuel consumption. A performance much more to the point was accomplished in the British light car trials, which took place last month. An account of the fuel consumption of the cars was kept, and it possesses its value from the fact that fuel and economy was a subsidiary object; the chief purpose was to get the car through the six days without a stop, and therefore only secondary importance could be attached to the fuel consumption.

In the table of performances one car is a long way in advance. It was a 7 horsepower Clyde, which was driven 620 miles on a consumption of thirteen gallons one pint of gasolene. This figures out at 47.2 miles on a consumption of one gallon of gasolene.

How good this performance really is is evidenced by a comparison with the work of the other cars in the contest. Second place is secured by a 7-horsepower Swift with a consumption of sixteen gallons of gasolene for the 620 miles; and from this the consumption becomes greater, until the extreme point is reached with 39 gallons 7 pints.

The work of the Clyde car stands out pre-eminently, however. It demonstrates conclusively that the item of fuel expense is almost a negligible one, where a light, two passenger car is concerned, as in this case it figures out at less than one-half a cent per mile, or less than one-quarter of a cent per passenger. As already stated, this was in a contest where fuel consumption was of minor importance, and where, therefore, the conditions closely approached those of everyday running. We thus know exactly what can be done by a car of modern design in all-around use.

Springs and Springing.

In making springs for automobiles, one of the chief difficulties encountered is the necessity for allowing for a considerable variation in the weight carried. For example, a touring car that is designed to carry five or six people will frequently be used with only two or three or four passengers, in which case—if the springing is right for the full load—the springs are too rigid, making an unyielding and uncomfortable body; whereas, if the full complement were carried the result would be just the reverse.

Mindful of this fact apparently, some makers endeavor to effect a compromise. By fitting springs with a smaller number of leaves, or by making the latter narrower or thinner, they obtain a construction that gives fairly good results when the car is not fully loaded; but, as a matter of course, they fall short of equal success when the full seating capacity is made use of. The springs of such a car are overloaded, and whenever ruts or holes or bad crossings are encountered the springs are extended to their fullest extent and the body comes down with a thump, jolting the passengers and threatening injury to the springs or other parts of the mechanism.

An observer has but to note the behavior of cars, say, in passing over car tracks or a bad street crossing to become convinced that a large number of cars—probably a majority of them—are undersprung. It is notorious that for years American cars have been criticised on this score, and with a great deal of justice. That some improvement has taken place is undeniable; but there is room for a great deal more. And while domestic cars are the most common offenders, those of foreign origin are far from being impeccable. Perhaps they do not have as many broken springs as the home product, but a very large proportion of them are, in spite of their higher cost, fitted with springs too light to properly perform the duties assigned to them. Repairmen, especially those who do general work, report that they derive a very considerable portion of their revenue from such jobs as replacing broken leaves and respringing cars.

The weakness has been long admitted by candid makers, and remedial measures have been applied; but the matter is attended with many difficulties and progress has been necessarily slow.

The banker-president of the Chicago Automobile Club is quoted as saying that if the A. A. A. refuses to deal with Oldfield as he desires him dealt with his club "won't play any more"—in other words, will withdraw from the national organization. If the banker-president was correctly quoted, it is evidence that while he may be a splendid banker he is lacking some of the virtues of the high class sportsman.

Now that one of their leaders finally has had revoked his right to use a vehicle of his choosing on the public highways of the commonwealth, will the Massachusetts automobilists arise and prove that they possess the spunk of a mouse?

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GODDARD CAN'T USE ROADS

First American Citizen to Suffer Penalty in Russianized Massachusetts—Others Acquitted.

Asa Goddard, president of the Worcester (Mass.) Automobile Club, bears the unique distinction of being the first citizen of the United States to be deprived of his right to use the public highways of his State. On Friday last his license to drive an automobile on Massachusetts roads was revoked for two weeks by the Massachusetts Highway Commission. Until the ban is removed he can make use of the roads only on peril of summary arrest and punishment.

The action is one of those arising from what are locally termed the Shrewsbury cases. The town of Shrewsbury, Mass., has been conducting a crusade against the alleged speeding of automobiles, and its officials made a number of arrests under the State law. Four of these cases came up for decision before the State Highway Commission, to which body the enforcement of the law's provisions is delegated, last week. In only one of them, that of Goddard, was a penalty inflicted.

In announcing the revocation of Mr. Goddard's license, the board says: "The allegations of the complaint are proven to the satisfaction of this board, and it further appearing that said Goddard had previous to the time of said complaint been convicted twice of operating his automobile at an unlawful rate of speed."

The cases of C. L. N. Cushman, of Newton; E. F. Bell, of Beverly, and Frederick L. Ames, of North Easton, were placed on file. In these cases the board states: "The allegations in the complaint are proven to the satisfaction of the board technically; but it appearing that said Bell, Cushman and Ames had not previous to the time of said complaint been accused or convicted of operating their automobiles at an unlawful rate of speed, the cases were placed on file."

By these decisions the cases of the seven automobilists from whom the selectmen of Shrewsbury sought to have licenses taken are disposed of, the other three having been settled earlier. One of the others, L. P. Sims, of Worcester, proved that his automobile was not in Shrewsbury on the day mentioned; another, L. A. Crossett, of Abington, proved that he had sold his machine before the date of the alleged overspeeding, and G. W. F. Stevens, of Boston, proved that a mistake had been made in taking the number, and that his machine was not in Shrewsbury on August 14.

To License Cars and Baby Carriages.

The Marion (Ohio) City Council is considering the enactment of two ordinances regulating the speed of automobiles within the city limits and placing a license fee on carriages, automobiles and all conveyances. Under the latter, carriages and all conveyances owned by private citizens will require licenses costing $1 each. Baby carriages will bring 25 cents each. Drays, omnibuses and other conveyances used for deriving a revenue will require $2 licenses.

Smeared Number Leads to Legal Test.

One Massachusetts motorist has plucked up courage to fight for his constitution-given rights, and as a consequence the Supreme Court of that State will be called on to pass on the constitutionality of the automobile registration law of 1903.

The matter will come up for decision in the case of the Commonwealth vs. F. Shirley Boyd, of Cambridge, which was before the Suffolk Superior Criminal Court last week, upon which a verdict of guilty was recorded by a jury on agreed statement of facts. Mr. Boyd was fined $10 in the lower court for running his automobile, which was registered, with his numbers besmeared in such a manner that they could not be read. He appealed the lower court sentence with the intention of trying the status of automobile owners and their rights under the law, and his attorney and the prosecuting attorney submitted the case to the court on the facts to which they had agred.

Judge Holmes told the jury that was impanelled that if they believed the facts as presented they should bring in a verdict of guilty, while the defence asked that the judge instruct the jury to bring in a verdict of not guilty. This ruling being refused, Lawyer Shrigley, for the defendant, excepted, and this fact was noted. The sentence of $10 imposed in the lower court was reaffirmed, and then sentence was stayed pending the Supreme Court's decision, which will probably not be given for several months.

Californians Fix Date to Endure.

After a number of postponements, the date of the California endurance run has been selected, viz., starting October 12. The run will be approximately 500 miles, and will start from San Francisco, contestants going through to Los Angeles in four days.

The run is not limited to the members of the clubs, but is open to all automobilists. The contest will be decided upon points. Each contestant will be credited on starting at 2,500 points, and one point will be deducted for each minute penalized stop. An average speed of practically twelve miles an hour, including non-penalized stops, must not be exceeded. The average running speed may be as low as about eight miles per hour, including non-penalized stops, but must not be less than practically eight miles.

Will Climb Eagle Rock Agian.

The annual Thanksgiving Day hill-climbing contest up Eagle Rock hill will be held this year as usual. It will, as heretofore, be in charge of the Automobile Club of New Jersey, and the price classification for cars adopted last year will be adhered to. Several new events will be added to the programme.

FAIRLY SLAUGHTERING TIME

Columbia Crew Nearing Metropolis with Chicago-New York Record at their Mercy.

Again a Columbia touring car, driven by Bert Holcomb, Lawrence Duffie and Eddie Bald, is the holder of the Chicago to New York record.

At least this apparently was the case as the Motor World was going to press. The Columbia at that time had left Newburg, N. Y., early Thursday morning for the last stage of its remarkable journey, and, barring unusual accidents, would reach New York by or before noon, with a very substantial cut in the record to its credit.

A Columbia touring car, driven by B. B. Holcomb and Lawrence Duffie, made the first great cut in the record from Chicago to New York last year, and established a new basis for intercity records by making a continuous trip, driving the car day and night, one man relieving the other and the man off resting while travelling ahead by rail. That notable performance, the first of its sort, was made with a 24-horsepower Columbia, and the time made was 76 hours.

This record of Holcomb's stood until early in September of this year, when A. G. Schmidt and J. A. Ellis drove through in 72 hours 46 minutes.

Holcomb and Lawrence set out to regain the record at 2 a. m. on Tuesday in a 30-35 Columbia, and the first 384 miles, to Cleveland, was made in 16 hours. The car beat the Schmidt and Ellis record to South Bend by more than an hour, and kept ahead of its own schedule and the record all the way. Buffalo was reached at 7:40 a. m. on Wednesday, and the car left there at 8:45. Binghampton was reached at 9 p. m. on Wednesday in a driving rainstorm.

When the car left Newburg on Thursday morning it was expected that the record would be broken by ten hours or more.

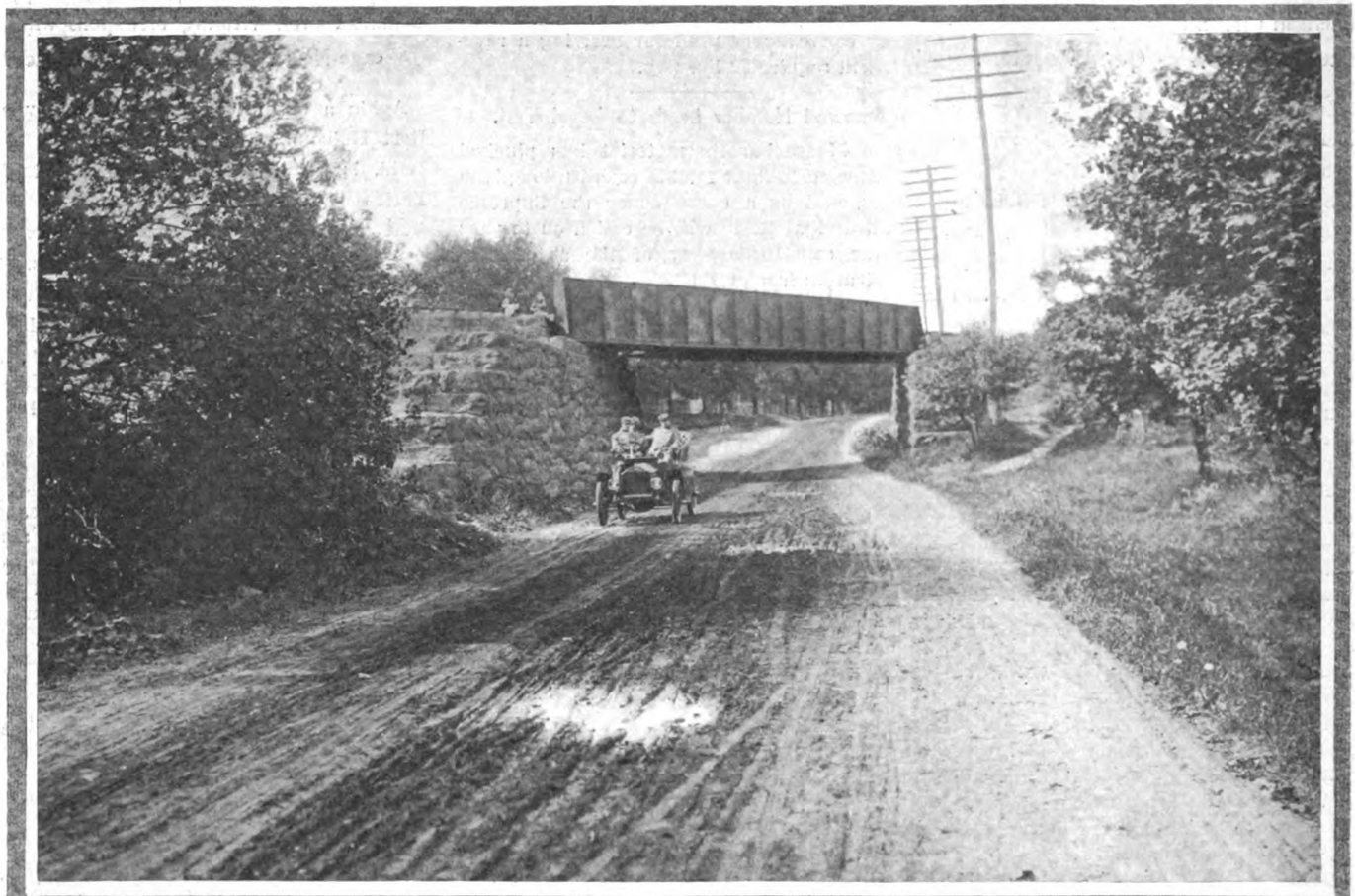
Holcomb started with the car to make the trip on Monday morning, but was obliged to turn back. Newspaper reports stated that an axle broke, but this was not true, as is obvious from the early start made on Tuesday. What happened was that the gas lamps blew out, and in the dark the car ran into the end of a blind road and bent a pivot. There was no other damage.

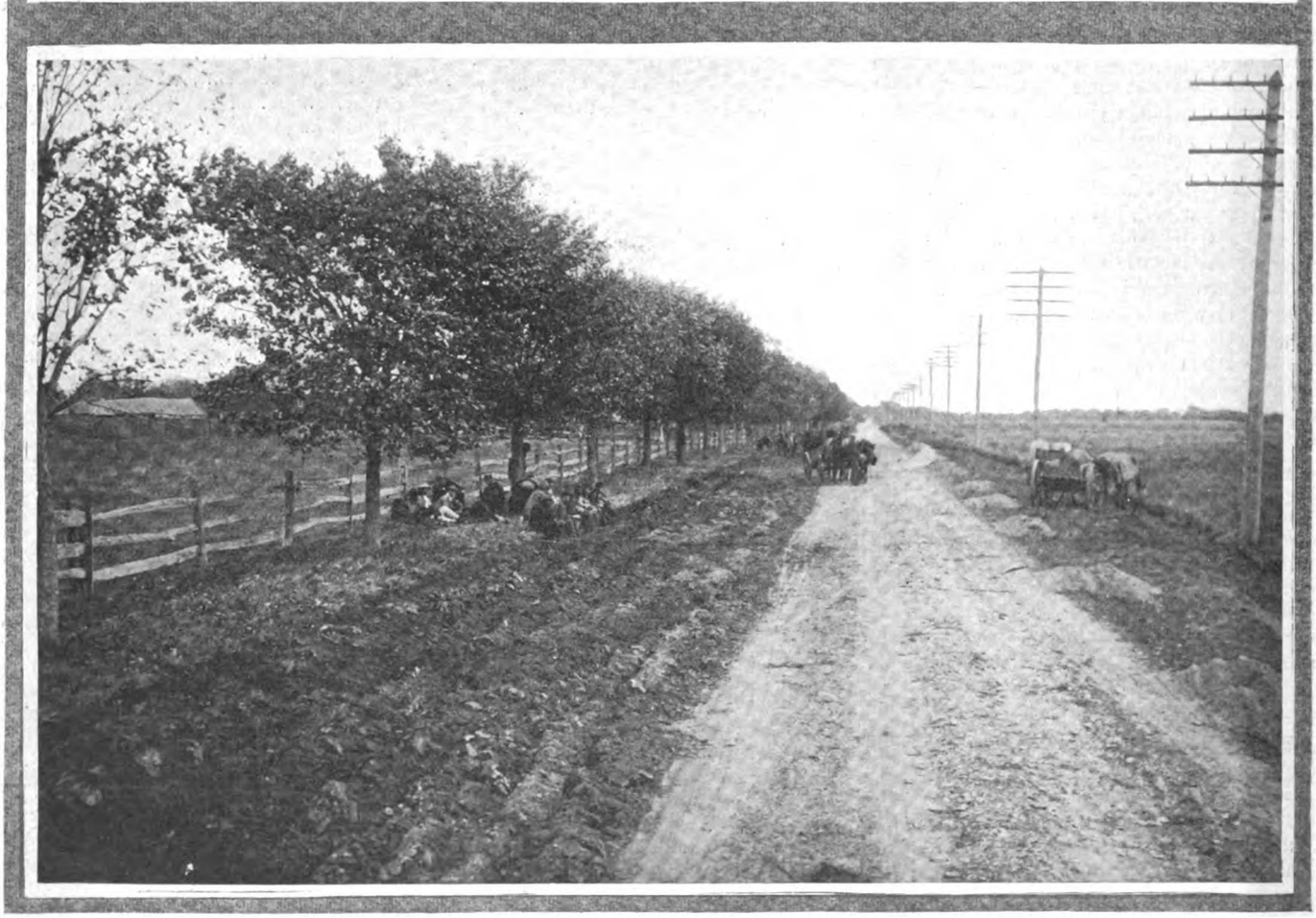
The Beauties of Registration.

But for the fact that he was able to produce proof that his car was in the shop at the time of the alleged occurrence, Dr. E. M. Eisenbeiss, of Indianapolis, Ind., would have been found guilty of illegal speeding. A policeman thought he saw Dr. Eisenbeiss's initials on a fast-running car, and haled him in court to answer for the offence. The case was dismised after it was shown that the Eisenbeiss car was entirely different from the offending one, and that it was not in use at the time.

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ROUGH GOING ON THE JERICHO ROAD NEAR QUEENS.





THE UNCOMPLETED BETHPAGE ROAD NEAR HEMPSTEAD.

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READY FOR BIG RACE

Opposition Collapses, but "Yellow" Press is Still Shrieking—The Doings of the Week and the Conditions Chronologically Stated.

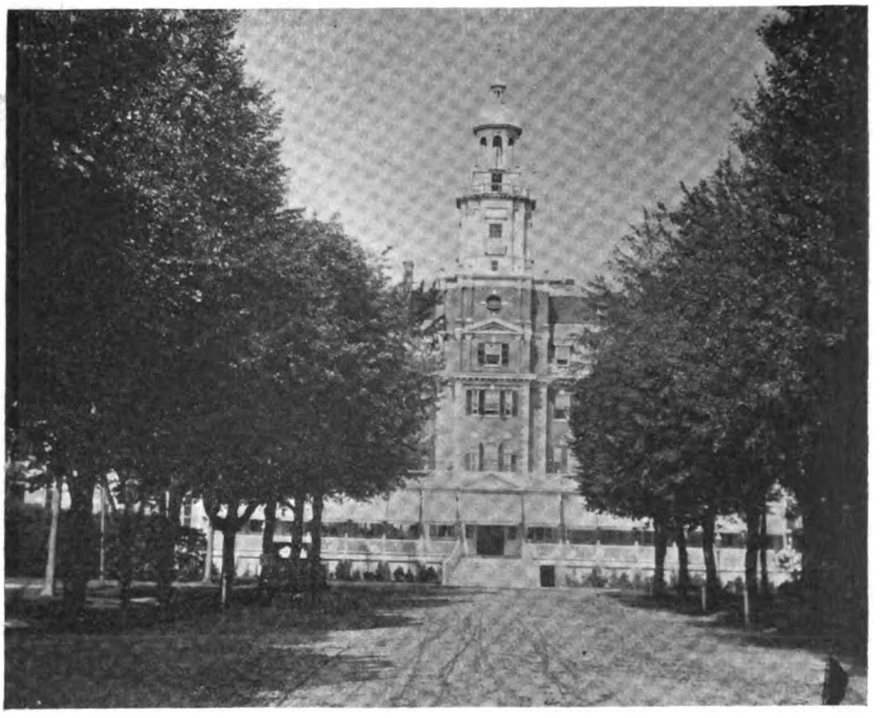
America's first great road race and first truly international contest between motor cars, which is to be run on Saturday under the auspices of the American Automobile Association over a course on Long Island for the cup presented by William K. Vanderbilt, jr., has been the all absorbing theme of the last week. Not only has it been the subject uppermost in automobile circles everywhere, but the interest of the general public has been quickened until the coming event has assumed, as it should, proportions that far overshadow any previous automobile event in this country.

With the automobilists an unprecedented enthusiasm has been kindled, and this has been infectious to many of the general public, but the attention being paid to the forthcoming race has not been wholly due to friendly interest. The yellow journals have been busy inciting opposition, and so much of the public attention being given to the affair has been due to this that the enthusiasm of those who want to see America take its place among other nations in offering a field for international competition, to the end of fostering a great new industry and sport, is mixed with apprehension.

At the present writing the competition between the "yellows" in crying "Wolf" to the public and making frantic efforts to influence the minds of readers is so great that it is a fairly open question whether or not the race will be run without at least some serious interference and perhaps delay. The opposition of a few farmers, banded as a "protective association," has been overcome and their antagonism changed to indorsement, but the notoriety seeking "yellows" have declined to accept this verdict, and are continuing an individual clamor against the race. One New York evening daily has gone so far as to declare in flaunting headlines that, although the people most concerned are in favor of the race being run, it will prevent the contest.

The obvious inference is that an insurmountable barrier, or a serious delay, may be imposed at the last moment by the suing out of an injunction by the opponents of the race, just as it was pointed out last week by the Motor World exclusively might be done. The apprehension of this was expressed by Chairman A. R. Pardington of the A. A. A. racing board in the interview with him published by the Motor World last week. Mr. Pardington's comment on the situation, which was then not so critical as it is now, was as follows:

"Everything that human foresight can suggest has been done. We have engaged counsel and prepared affidavits for submission in case an injunction is granted, and shall at once ask that it be vacated. The only way they can give us serious trouble is to spring the injunction on us at the last minute—say the morning of the race. That would cause some delay, of course. But it is very doubtful whether they can do this. An injunction can be granted only by one of the three judges in this district, and unless some of the facts in the case are concealed when making the motion, I do not believe an injunction will be granted."



HEADQUARTERS AT GARDEN CITY.

Barring the doubt introduced by this hysterical attitude of the "yellows," the prospects for a great race have seemed excellent, albeit opinions differ concerning the quality of the course and fears of disaster have been expressed by some.

Arrangements for safeguarding as far as possible both the contestants and the public, for starting, checking and timing the race, laying the dust on the course and fixing the poor spots on it, and providing for spectators have been elaborate. The preparations have progressed rapidly, and with the exception of one fatal accident on the course that was not due to speeding nor to recklessness, all has gone smoothly and with satisfactory promise for the outcome.

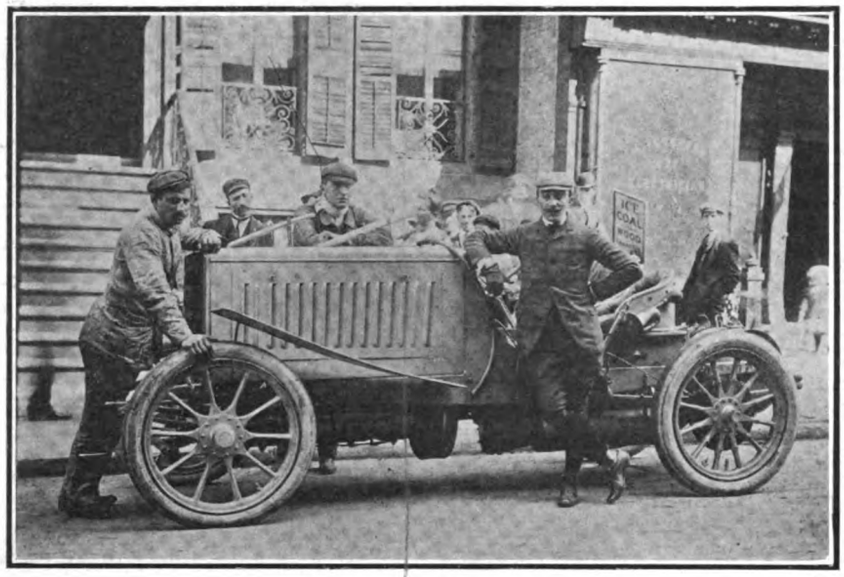
The preparations, coupled with the arrival of the foreign contestants, the repairing of all the competitors and scores of visitors to the scene of the contest, the practice work on the road, the one sad mishap, the opposition of the "yellows" and the speculation as to the result have worked up a steadily increasin interest that is emphasized all the more by the apathy shown toward previous international races and during the summer toward this one. The enthusiasm did not become a flame until after the foreigners were all here, and it was demonstrated at the drawing for position that every one of the eighteen entrants intended to start, and after the exploring of the course became brisk and of daily continuance, but all this week the flame has been fed and fanned and has burned brightly.

The news incidents in connection with the

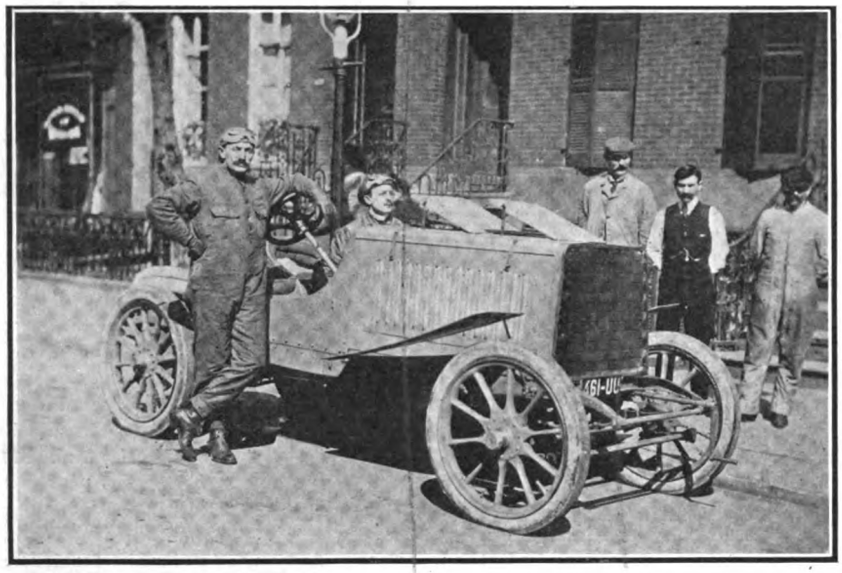
THE ORDER OF STARTING.

Entrant.	Car.	Driver.	Time of start.
1—S. B. Stevens.....60 H. P.	Mercedes	Campbell	6:00
2—R. E. Jarrige.....80 H. P.	De Dietrich	Gabriel	6:02
3—C. A. Duerr.....40 H. P.	Royal	Tracy	6:04
4—Pope M. C. Co.....60 H. P.	Pope-Toledo	Webb	6:06
5—George Arents, jr.....60 H. P.	Mercedes	Owner	6:08
6—Pope M. C. Co.....24 H. P.	Pope-Toledo	Lyttle	6:10
7—Panhard-Levassor .....90 H. P.	Panhard	Heath	6:12
8—E. R. Thomas.....60 H. P.	Mercedes	Hawley	6:14
9—C. G. Dinsmore .....90 H. P.	Mercedes	Werner	6:16
10—A. G. Vanderbilt.....90 H. P.	F. I. A. T.	Sartori	6:18
11—W. G. Brokaw.....90 H. P.	Renault	Bernin	6:20
12—A. Clement.....90 H. P.	Clement	Owner	6:22
14—Panhard-Levassor .....90 H. P.	Panhard	Tarte	6:24
15—Panhard-Levassor .....90 H. P.	Panhard	Teste	6:26
16—Packard Motor Company.....30 H. P.	Packard	Schmidt	6:28
17—Frank Croker .....75 H. P.	S. & M. Simplex	Owner	6:30
18—Isidore Wormser .....60 H. P.	Mercedes	Owner	6:32
19—W. Wallace .....90 H. P.	F. I. A. T.	Owner	6:34

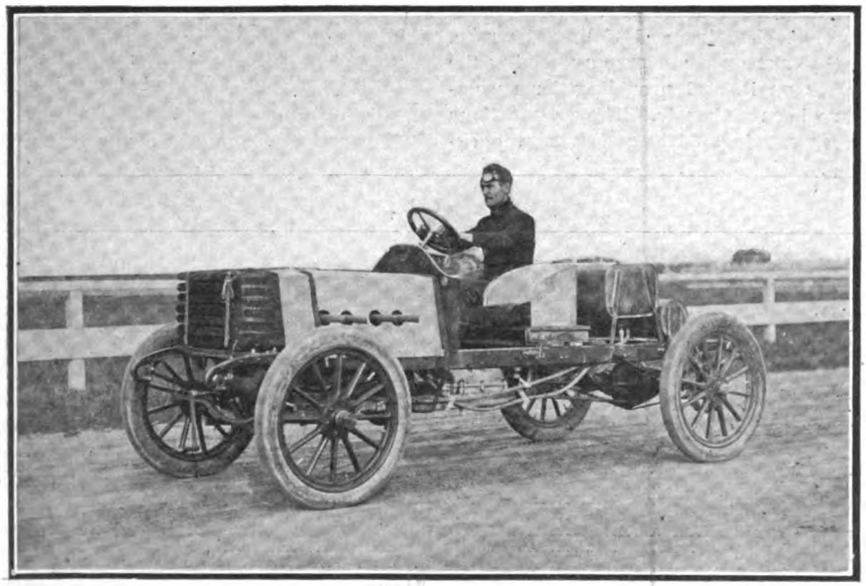
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TESTE (PANHARD), FRANCE.



TART (PANHARD), FRANCE.



TRACY (ROYAL), UNITED STATES.

preliminaries for the race have been numerous enough to keep the subject prominent in the daily press, and the prospects when the first half of the week had passed were that tens of thousands of persons will throng to see the race.

Briefly summarized, the events of the week which have kept the race in focus and intensified interest in it have been: The arrival of celebrated foreigners to compete or to witness; the drawing for starting positions by the competitors; the flocking to the course of all the contestants and others interested; the opposition of local motorphobes supported by the hysterics of yellow journalism; the accident which resulted fatally to Harold Rigby, a mechanic, on Monday; the public hearing before the supervisors at Mineola on Tuesday at which the local populace voted approval of the supervisors who granted permission for the race; the sprinkling of ninety thousand gallons of oil on the



GABRIEL (PANHARD), FRANCE.

roads of the course; the completion of the grandstand, and the work of patching up the bad spots on the course.

Before citing the details of the latest happenings a synopsis of the race conditions, the course and the contestants will be appropriate, even at the cost of some repetition.

The cup that is the prize for which the automobiles will compete on Saturday was presented to the American Automobile Association by William K. Vanderbilt, jr., to be a perpetual trophy for international competition by members of clubs recognized by the A. A. A. and the Automobile Club of France. Not more than ten cars may represent any one country. The first two races, those of 1904 and 1905, must be held in the United States, regardless of who is the winner, but after that the race may be held in the country of the club that holds the trophy. The commission in charge of the race this year is the racing board of the A. A. A., as follows: A. R. Pardington, Brooklyn, chairman; William K. Vanderbilt, jr., New York; James L. Breese, New York; William Wal-

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lace, Boston; F. C. Donald, Chicago, and G. L. Weiss, Cleveland.

The cars entered for the race must weigh not less than 881 pounds nor more than 2,204 pounds, and each must carry two persons, weighing not less than 132 pounds each, seated side by side. The distance of the race must be not less than 250 miles nor more than 300 miles. All these things are provided for in the deed of gift, and are supplemented by rules in detail adopted by the racing commission.

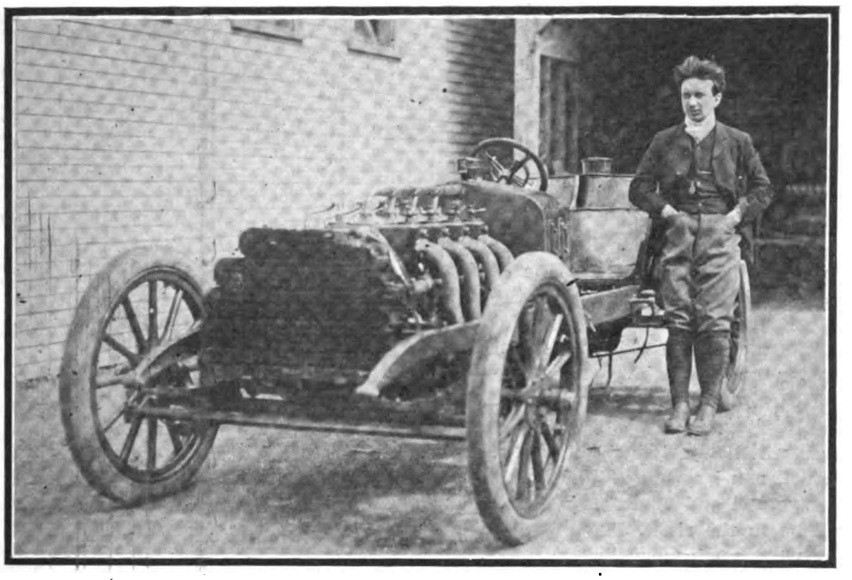
The course selected by the commission is located mostly in Nassau County, on Long Island, with just 6,557 feet of it in Queens County, and therefore within the limits of greater New York. For permission to race on this portion a special permit had to be obtained by action of the New York Board of Aldermen. For permission to race on the major portion of the course a special permit



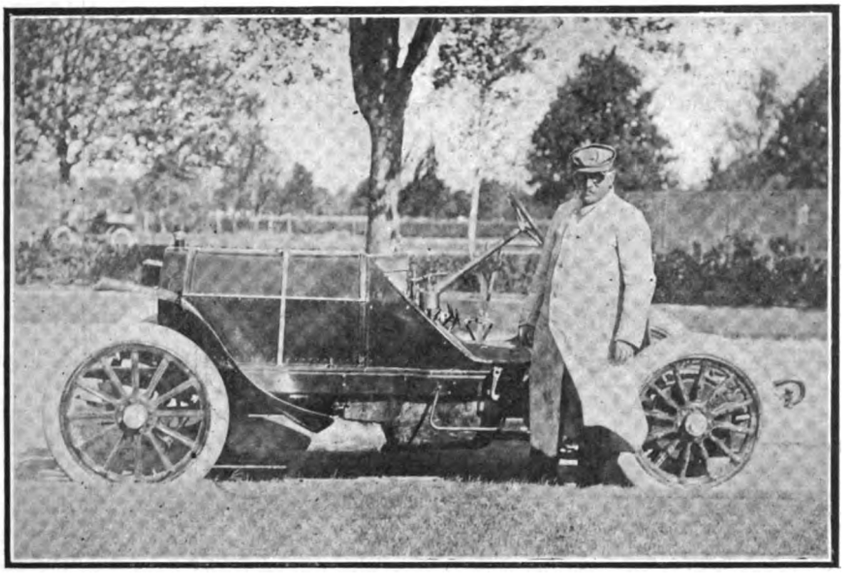
SARTORI (FIAT), ITALY.

was obtained from the Board of Supervisors of Nassau County. Under the automobile law of 1904 the local authorities of any county were empowered to suspend the speed limit on any road in order to permit racing. Before applying to the Nassau County supervisors, however, the race commission took a petition around to the residents of the several villages and towns in the county and to the farmers, and received an overwhelming majority of the signatures of the residents. In East Williston, for instance, the signatures of every voter excepting five were obtained. It was on the strength of this petition that the Nassau County supervisors granted the permit for the race, suspending the speed limit for the benefit of those in the race for that day.

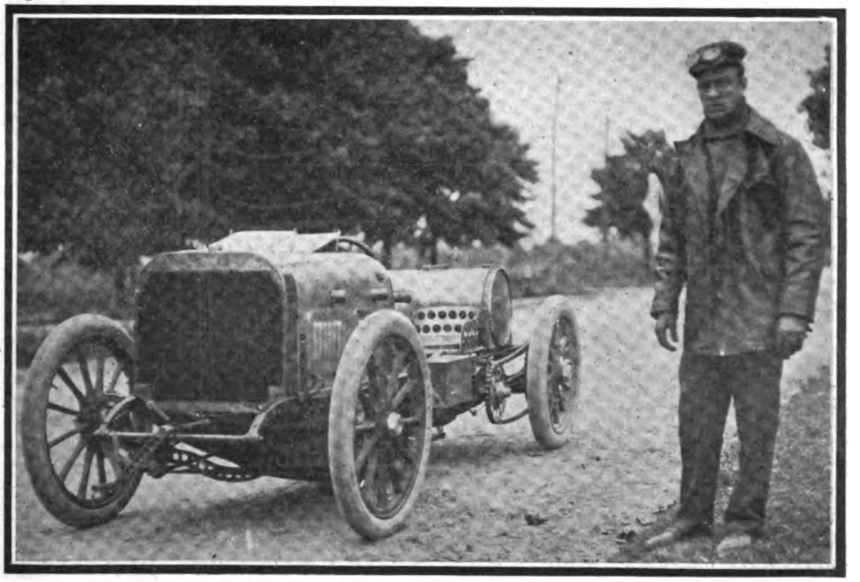
The course is an elongated triangle, or cone in shape, with the base lying to the east and the apex to the west. This apex is at Queens, fourteen miles from New York City. The start and finish will be at Westbury, about twenty-seven miles from New York.



CLEMENT (CLEMENT-BAYARD), FRANCE.



WERNER (MERCEDES), GERMANY.



CROKER (SIMPLEX), UNITED STATES.

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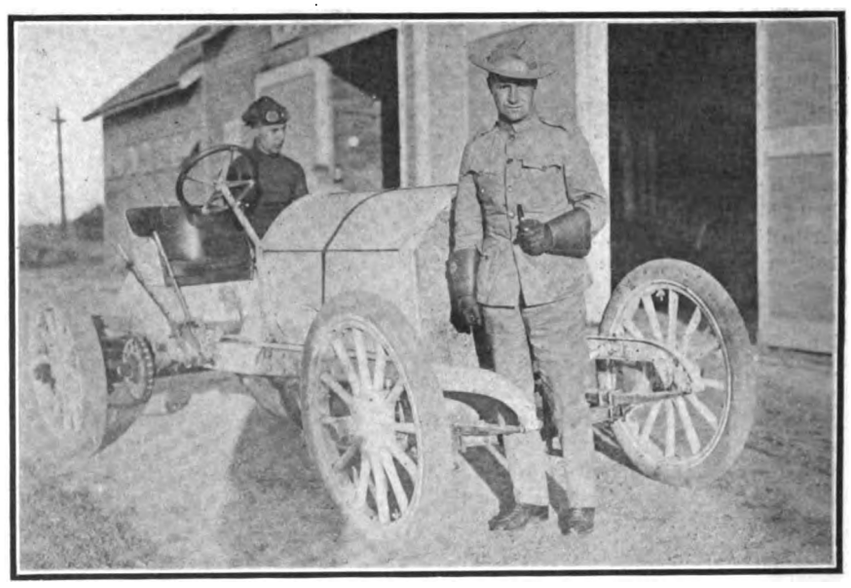
The course passes through the villages of Jericho, Hicksville, Central Park, Hempstead, Queens, Hyde Park and Jericho, with Floral Park, Garden City, Mineola and Westbury lying within, in the infield, so to speak.

The course is exactly 30.24 miles in length, and must be covered ten times. There are two controls on the course, one at Hicksville, 0.40 of a mile in length, and one at Hempstead, 1.40 miles in length. Three minutes must be spent in going through the Hicksville control and six minutes in going through the Hempstead control. Thus the total distance of the race will be 30.24 miles, multiplied by ten and less the sum of the distances in control, 1.80 miles, or just 284.40 miles total distance.

The race will be started at Westbury, and the cars will run by way of Jericho, Hicksville, Hempstead and Queens, so that every turn will be to the right. There are sharp turns, at right angles or slightly acute, at each corner of the triangle—at Jericho, at Plain Edge, below Central Park, and at Queens. These will each have to be negotiated ten times, and all of them are apt to prove troublesome. There also are a number of other "ticklish" angles in the course that are not exactly comforting at high speed and that hold promise of "developments." A portion of the road between Plain Edge and Hempstead is being reconstructed, and may not be completed in time; if it is not, it will make rough going. On the Jericho road, near Queens, the course is none too smooth, and requires a viselike grip on the steering wheel There are also seven or eight miles of road on the course which are so narrow that it will be risky for the contestants to attempt passing there.

The race is to be started at 6 a. m., and is expected to be finished in about five hours.

Eighteen entries were made for the race. Classified by nationalties the entrants, the cars and their drivers are as follows:



WALLACE (FIAT), ITALY.

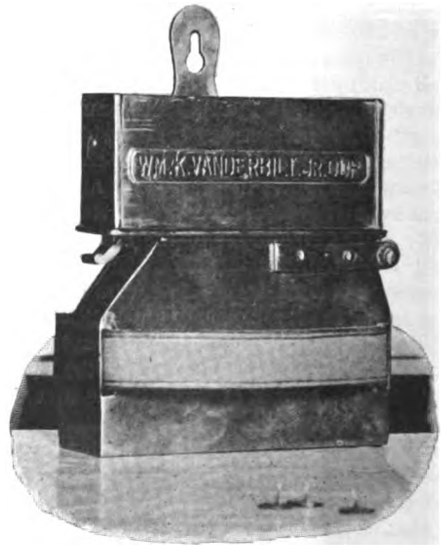
Entrant.	Car.	Driver.
UNITED STATES.		
Pope Motor Car Co.	60 h. p. Pope-Toledo	Albert C. Webb.
Pope Motor Car Co.	24 h. p. Pope-Toledo	H. H. Lyttle.
C. A. Duerr	40 h. p. Royal Tourist	Joseph Tracy.
Packard Motor Car Co.	30 h. p. Packard	Charles Schmidt.
Frank Croker	75 h. p. S. & M. Simplex	Frank Croker.
ITALY.		
William Wallace	90 h. p. F. I. A. T.	William Wallace.
A. G. Vanderbilt	90 h. p. F. I. A. T.	Paul Sartori.
FRANCE.		
A. Clement	80 h. p. Clement-Bayard	A. Clement.
W. G. Brokaw	90 h. p. Renault	M. G. Bernin.
R. E. Jarrige	90 h. p. De Dietrich	Gabriel.
Panhard & Levassor	90 h. p. Panhard	G. Heath.
Panhard & Levassor	90 h. p. Panhard	Teste.
Panhard & Levassor	90 h. p. Panhard	Tarte.
GERMANY.		
S. B. Stevens	60 h. p. Mercedes	Campbell.
C. G. Dinsmore	90 h. p. Mercedes	Werner.
Isadore Wormser	60 h. p. Mercedes	Isadore Wormser.
E. R. Thomas	60 h. p. Mercedes	Edward Hawley.
George Arents, jr.	60 h. p. Mercedes	George Arents, jr.

The checking and timing system to be used for the race is one of great elaboration. For the official timing the method used in the Paris-Madrid race has been adopted. Each car will carry a polished copper box attached to the seat. At the starting point the checker will drop into this box, which is locked, a ticket bearing the starting time of the car. At the entrance to each control the checker will drop a card stating the time of arrival, while the checker at the exit of each control will drop in a card stating the time of departure. At the finish the time of each car will be similarly put into the box, so that when the boxes are emptied the judges will have in hand a complete official record of the time of each car. Besides this, the time of each car will be taken every time it passes the grandstand, so that the time for each round will be known. Beyond all this again, arrangements have been made with the Federation of American Motorcyclists whereby there will be twenty checkers mounted on motorcycles distributed along the course, who will record the passage of each contestant.

Experiments with crude oil were made on the course as long ago as September 23, and, being satisfactory, the work of sprinkling the course with ninety thousand gallons of crude oil was begun a week ago last Monday, and it was continued late into the present week. Eighteen tanks of oil, holding five thousand gallons each, will be used, and the cost will be about $5,000. As was told in the Motor World of last week, a contingent fund is being subscribed to in order to defray any possible deficit in the accounts of the American Automobile Association in connection with the race.

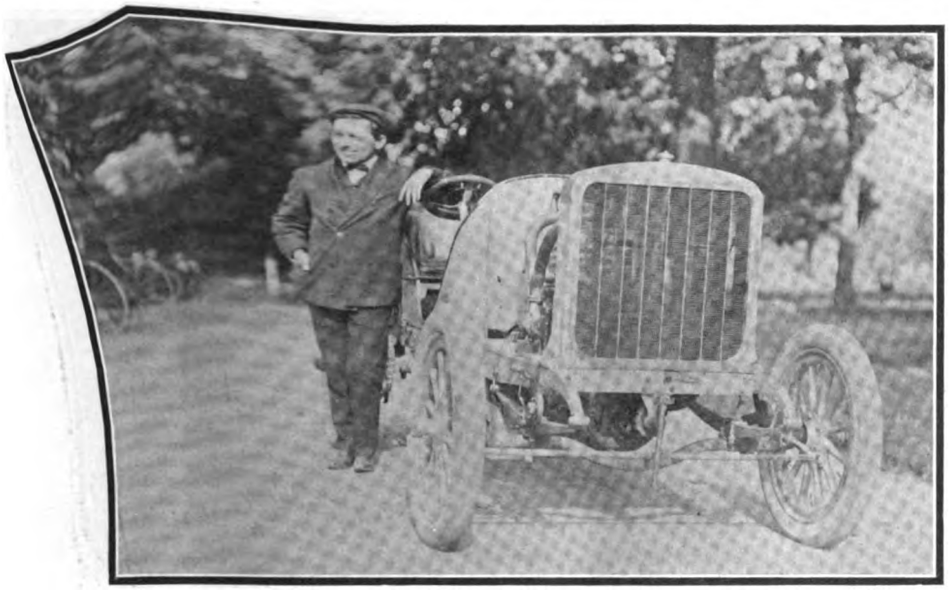
The work of building the grandstand that was begun about two weeks ago has gone on daily, but the progress was slow owing to the plans being changed a second time in order to accommodate more persons. A bulletin board has been erected opposite the grandstand.

The first contingent from abroad to arrive were among the first contestants to visit the course, and for a brief bit they had it to themselves before enthusiasm was generally aroused. On last Friday, when young Albert Clement started with his 80 horsepower



THE CHECKING BOX.

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WEBB (POPE-TOLEDO), UNITED STATES.

Clement for his first visit to the course, he had a novel adventure, in which his car narrowly escaped serious damage. While running over the Hoffman Boulevard, near Elmhurst, Clement turned his car out in order to pass a team, and in doing so ran into a mud hole, in which one of the front wheels nearly disappeared. A team of horses and ten men worked nearly an hour extricating the car. Fortunately no damage was done.

One serious hitch that threatened to reduce the field of starters occurred last week, when the Custom House authorities held up the three 90 horsepower racers of Heath, Teste and Tarte and the De Dietrich Gabriel is to drive in default of $18,000 duty. Under a special order from the Treasury Department, cars imported solely for the race were permitted to enter free, under a bond that they be reshipped within a short time. Through an oversight, however, it was neglected when the cars were shipped from France to declare the purpose they were going for, and so the duty was demanded. Through influential intercession, however, the cars were released last Saturday under a special order from Assistant Secretary Armstrong of the Treasury Department.

The real active stir which betokened the last few days of preparation for the race may be said to have begun on last Friday, when the steamer Savoie arrived with the last of the contingent of foreign competitors aboard. These were Gabriel, famous winner of the last Paris-Madrid contest, and who will drive the 90-horsepower De Dietrich in the race on Saturday; Teste, who finished second in the last Circuit Ardennes, and who will drive a Panhard on Saturday, and Tarte, who will also drive a Panhard. Besides these three famous chauffeurs, the Savoie brought M. Voigt and Count Armand de Gontaut Biron, both of the firm of Charron, Giradot & Voigt, who came on a business mission, but appointed their time so that they might see the race.

The French chauffeurs spent but little time in New York, making haste to reach the course and join their fellow competitors in the Long Island road houses. Out on the course they found young Clement, the Frenchman, and Heath, the American, both of whom came from Europe to drive in the race, besides their compatriots, Sartori and Bernin, the chauffeurs of A. G. Vanderbilt and W. G. Brokaw, respectively, who are permanently settled in America.

On Saturday the course was being oiled, but that did not prevent the entrants from exploring it, and in spite of all warnings there was some speeding.

Saturday night all interest centred on the drawing for positions at the Automobile Club of America. Every one of the eighteen drivers entered for the race excepting two and many of the owners of the cars entered were on hand for this affair.

The drawing, as conducted, was eminently fair. It was not done with regard to nationalities, as was expected, but every one drew as an individual, under a plan that gave no nation and no person any preference, but put all on an equal basis. First a lot of slips, numbered consecutively from one to eighteen, were folded and put into a box and the contestants invited to draw. This was merely a preliminary drawing in order to insure impartiality. The numbered slips thus drawn determined only the order in which the contestants were to draw for the order of starting. There was no scramble or unseemly haste about this first drawing. The competitors were all notified of the arrangements, and at their leisure they went and picked a number. In this way all possibility of any accusations of unfairness was avoided. As all the numbers, including one, would be in the hat when the first man drew, it followed that the first to draw would have a better chance of getting a low number than those who drew later, unless by unusual chance all of the early drawers got high numbers. At all events, the plan was devised for the purpose of leaving everything to chance in determining the order of start and nothing to dictation.

The preliminary drawing over, the contestants took the turns that numbers gave them in making the final drawing. The numbers determining the order of start, all securely hidden in sealed envelopes, were placed in a hat and the final drawing was made. This resulted in a distribution of luck of which no one could complain, and which, on the whole, was pretty fair. Four countries—America, France, Germany and Italy—being represented in the race, the first division would be counted as four cars, if the starting was ordered by nationalities, as it is in the Bennett Cup race. The drawing gave place in this first division to two American cars, one French machine and one of German make, Italy being the only one of the four countries not in the first division.

As determined by the drawing, the start will be as previously detailed.

It will be seen that due respect was paid to those who might be superstitious by omitting the number 13 from the list.

It will be seen by the table that Italy had the poorest luck of any nation, albeit both of the Italian cars are owned by prominent Americans, and one is to be driven by its owner. Although the result of the race will be determined by the fastest time made, and not by the first across the tape at the finish, it is recognized that the order of the start will have much to do with its outcome. On the face of it, the German cars got the best of the drawing by getting number one. The Americans did well by getting two places in the first six. Although four French cars are back in the rear bunch, the Frenchmen are thought to have the best of the drawing. Gabriel will start second and Heath seventh. With a practically clear road ahead of him and Heath and Werner, who will start ninth, separated from him by long intervals and having a number of cars to pass, Gabriel will have a great chance. Still, the way-back men will have the pace set for them and a constant incentive to work by car after car ahead.

On Sunday last the course was a Mecca for not only devotees of automobile racing but for many pilgrims of the sport and trade besides. Hundreds of machines, touring cars as well as racers, went scooting over the course, and hundreds were on hand at the roadside to watch.

There was speeding, of course, and it was not interfered with, despite all the statements of the racing committee concerning the strictness with which the course would be guarded. The comment concerning the course was various. Gabriel and a few others pronounced it better than the course in Ireland over which the race for the Bennett Cup was held in 1903, arguing that the Long Island course is free from hills, has fewer controls and no more turns than the Irish course. Others doubted that the course would prove to be very fast, on the ground that it is small, requiring ten circuits, thus multiplying the number of bad turns, and on

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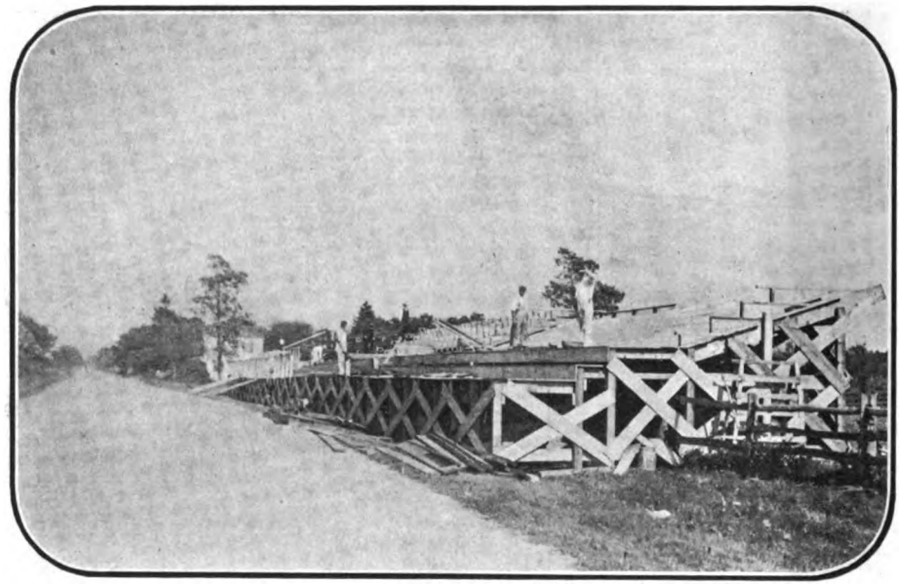
Sunday had places where the surface was very poor, and which it seemed impossible to remedy in time for the race.

The Motor World man who attended the Bennett Cup race in Ireland, and saw the course there, after looking over the Long Island course disagreed with Gabriel. He thought that the course here will not prove so fast nor so safe as that in Ireland. The compound turn and curves at Jericho he deemed dangerous, while the turn at Plain Edge to the Bethpage Pike is one that the racers are apt to run past. The bad stretch of road on the Bethpage Pike is one that is apt to be in such poor condition as to compel slowing or the taking of risks, and at the turn in Queens the road is ten inches deep in sand. The cars will each have to slow down thirty times at the Jericho, Plain Edge and Queens turns in the ten laps of the race.

The work of oiling the course was in progress on Sunday while the contestants and other visitors were going over it. An illustration of the thorough and conscientious way in which this work was being done was afforded when the driver of one of the sprinkling carts containing oil shut off his stream and pulled aside to let a visiting automobile go past, and in doing so left a small patch of road unsprinkled. To correct this the driver of the sprinkler backed his team after the motor car had passed and carefully sprinkled the small spot thus neglected.

By Monday of this week all the rooms and board to be had at hotels and private houses anywhere near the course had been engaged, and no accommodations were to be had. The representatives of the several tire companies were not the least among those who engaged quarters, several concerns buying in whole hostleries for the accommodation of their men.

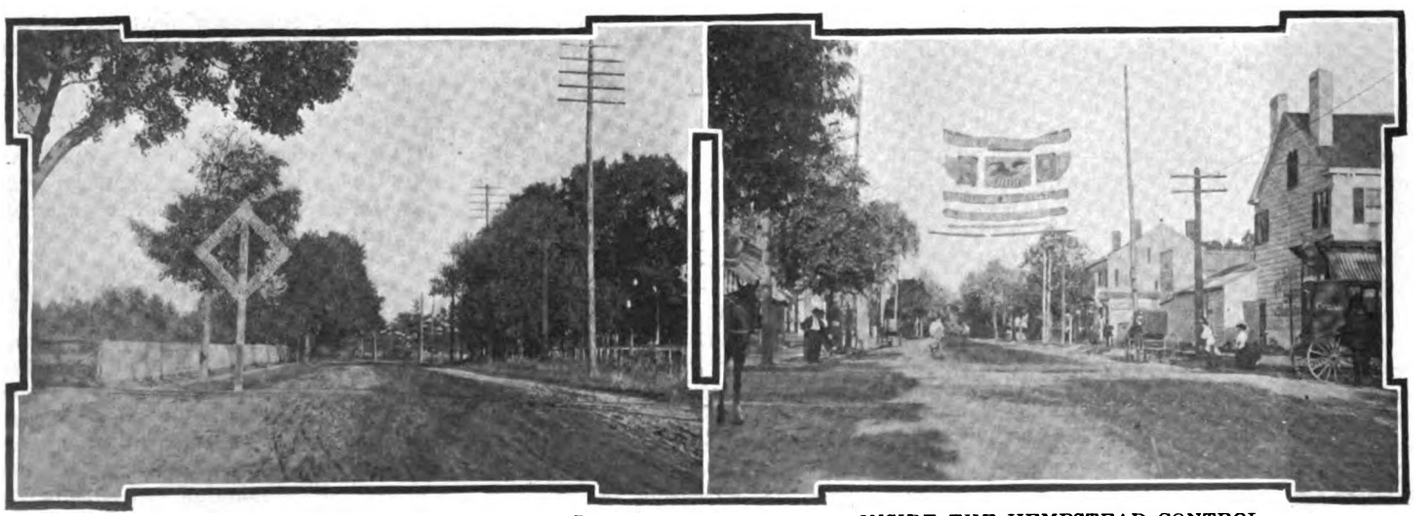
The practising on the course continued on Monday, and in the evening occurred the first accident, which resulted fatally and which was frightfully distorted and exaggerated by the yellow press. The 24-horsepower Pope-Toledo was the car that figured in the mishap with H. H. Lyttle, who is to drive it in the race, at the wheel, and an employe from the factory at Toledo, Harold Rigby, was injured so that he died the next morning.



THE GRANDSTAND AT WESTBURY.

The Pope-Toledo car was taken out to the course under the piloting of Henry Goodman on Monday afternoon. Harold Rigby and A. C. Anderson, both mechanics from the Toledo factory, accompanied Lyttle. It was late when the car reached the course, and as it was growing dark and Lyttle was making his first trip over the road, he kept his speed down to within twenty miles an hour. When he was nearing Hicksville, at 5:30 p. m., he passed a farmer's wagon. While driving on the side of the road, and starting to turn back, the steering knuckle broke. The farmer did not get in the way, as was reported, nor did any tire burst or come off, as most of the dailies reported. The machine was fitted with G. & J. tires, and they went through the accident unscathed.

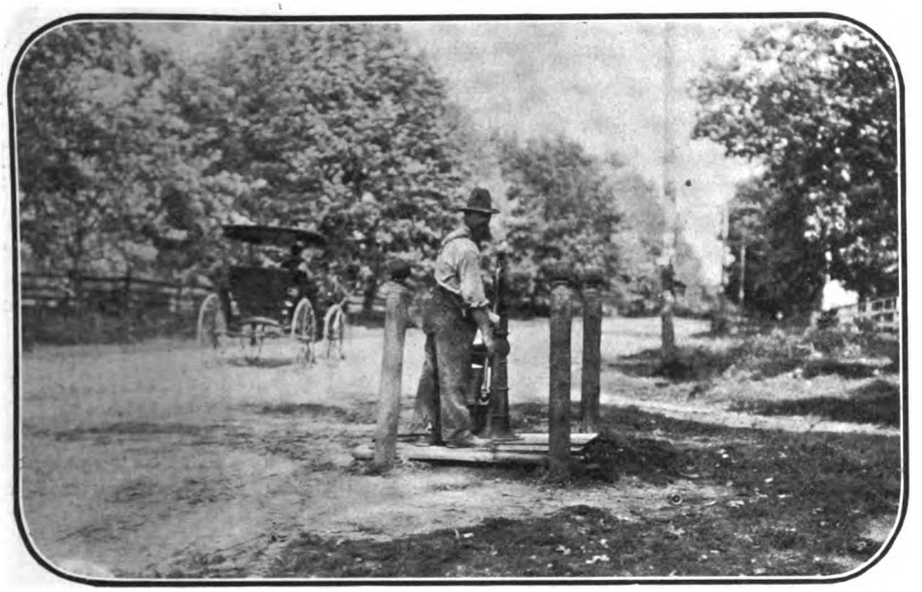
When the steering knuckle broke the car swerved and started across the gully and the grass at the side of the road. Lyttle was driving. Rigby was sitting on the low seat beside the driver. Anderson was sitting on the gasolene tank back of Rigby, and to steady himself had his legs twined about Rigby's body. When the car started toward the fields Lyttle shut off the power and jammed the brakes on hard. The car ran about twenty feet diagonally across the grass at the side of the road, and tore down about fifteen feet of a fence and came to a halt with only one-third of the car projecting on the inside of the fence. The shock of the braking and hitting the fence threw Anderson and Rigby forward and over the side of the car, Rigby underneath. Anderson was scraped and bruised, but Rigby had three ribs broken, and they penetrated his left lung. Lyttle was entirely unhurt. The accident was just such a one as might happen at any time to a touring car. The knuckle broke because it had been chilled too quickly. The only explanation Lyttle could offer of Rigby's injuries was that he fell over the aluminum guard, or edge of the car that forms the box, with Anderson's weight on top of him. That the damage to the car was not serious was shown by Lyttle running it



RAILROAD CROSSING NEAR HEMPSTEAD.

INSIDE THE HEMPSTEAD CONTROL.

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THE WESTBURY PUMP—STARTING AND FINISHING POINT.

to Brooklyn under its own power that same night. The radiator was bent and the lamps smashed. Rigby died in the Mineola Hospital on Tuesday morning. Lyttle said he would drive the car in the race.

All interest on Tuesday was centred in the public hearing before the Board of Supervisors in the courthouse at Mineola. The hearing was due to a petition of protest, signed by one hundred and fifty persons, which was presented by the Peoples' Protective Association and to the efforts of individual farmers against the closing of the roads to ordinary travel in order that the race may be held. It was said by some that the supervisors had exceeded their authority in granting permission for the race. There was talk of asking for an injunction to prevent it.

As a matter of fact, the hearing turned out to be a mass meeting of citizens which passed judgment on the Board of Supervisors and sustained it. There were only four speakers in opposition to the race, although the courthouse was crowded, and when the question was put to a vote there was only one negative voice. This vote, it is said, was the sarcastic utterance of an automobilist who was "feeling good."

Wagon loads of farmers had come to town to attend the meeting, and it was supposed that they were on hand to oppose the race. When, however, the time came to speak, the farmers were as fervent as any in approving of the action of the supervisors in granting the permit.

When the farmers arrived the race commission met them with the petition signed by the great majority of Nassau County residents favoring the race upon which the supervisors had acted. Confronted by this, the obstructionists were taken aback.

William K. Vanderbilt, jr., who gave the cup that is to be raced for on Saturday to the American Automobile Association, was at the hearing, but he did not speak. A number of other automobilists of prominence and wealth were present also.

A. R. Pardington, chairman of the A. A. A. racing board, spoke in favor of the race, as did William Wyckoff, of the association. W. R. Lewis, P. J. Powers, H. J. Dietz, T. Parsons, J. Kraatz, D. M. Munger and W. H. Haydock, all residents of the county, spoke in favor of the race. Those opposed were H. M. Bennett, secretary of the People's Protective Association; James Vandeveer, A. Taylor and C. T. Meyers.

The question came to a vote of the assembled people when Timothy Treadwell, a wealthy farmer of East Williston, offered a resolution giving the supervisors a vote of confidence with respect to its action in connection with the race. It was this vote that was carried with one sarcastic vote in the negative.

After this hearing Chairman Pardington ordered that all machines traversing the course should display their numbers, and declared again that any contestant caught violating the speed limit would be disqualified for the race. This action, the fuss made over the accident and the talk of stopping the race had a salutary effect on tne speeding, and there was very little of it after the hearing on Tuesday morning.

Friday is the day set for the official weighing in of the cars, for testing the telephone arrangements and the timing system. The telephone arrangements are in charge of the New York and New Jersey Telephone Co., with an expert engineer in charge, and it will be possible for the officials to communicate with all important points of the course on the day of the race.



WHAT HAPPENED WHEN CLEMENT WANDERED OFF THE MAIN ROAD.

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PHILADELPHIA MEET PLEASES

Large Crowd Witnesses Good Contests—Soules Defeats Hawley in Handicap Race.

By long odds Philadelphia's best automobile race meet was held at the Point Breeze track on Saturday, October 1. Well filled and keenly contested events, interesting time trials and the largest attendance ever seen at a Quaker City meet combined to make the function an emphatic and unequivocal success.

E. E. Hawley and the E. R. Thomas 60-horsepower Mercedes were the stellar attractions, but they were pressed closely by two 24-horsepower Pope-Toledo cars, owned by Charles Potter and Leon Goodman, and driven by Frank Yeager and Charles Soules, respectively. The last named were regular touring cars, brought to the track and started almost without change, and they were so evenly matched that one scored over the other by only the narrowest of margins.

Hawley drove the Mercedes in a ten-mile exhibition event, and, although he was unable to get within reaching distance of existing records, owing to the strong wind on the stretch, he covered the distance in the creditable time of 11:35, for which he was rewarded by the plaudits of the spectators. A five-mile exhibition was also given by Tom Fetch in the Packard car which recently made a 1,000-mile non-stop run.

The best race of the day was the five-mile Point Breeze Handicap, which brought together Hawley and his Mercedes and Soules and Yeager in the two Pope-Toledos. It was run in two heats and a final heat, all three being good contests.

In the first heat the 24-horsepower Pope-Toledo car driven by Yeager, with one minute start, won easily. Yeager lost almost 15 seconds by an imperfect start, but after once getting his car in motion he won applause by the manner in which he gradually overtook and passed all competitors. The Hawley Mercedes, which started from scratch, was unable to gain on the Pope-Toledo, but finished second.

The second heat was won by Soules (24-horsepower Toledo), who had no trouble in defeating E. S. Morton (24-horsepower Peerless).

The final heat brought together the two Pope-Toledo machines, Morton's Peerless and the Hawley Mercedes. It really was a race between the Toledo cars. It produced the best contest of the afternoon, and was not decided until the final mile, when the Soules car made a fine burst of speed after rounding the first turn and maintained a lead until the finish.

The summaries:

Special five-mile race for touring cars of 24 horsepower or under, with full equipment, to carry four passengers all told, at an average weight of 140 pounds each—Won by Frank Yeager (24-horsepower Pope-Toledo).

Special race for motorcycles; first prize, $20 in gold; second prize, $10 in gold—Won by A. Wicknick (1¼-horsepower Indian); Ed. Broomfield (1¼-horsepower Indian), second; J. E. Barranger (1¾-horsepower Indian), third. Time, 8:12 2-5.

Ten-mile race, for machines of any motor power, weighing from 881 to 1,450 pounds)—Won by William Mullin (10-horsepower Ford); second, Edward Wilkie (8¼-horsepower Cadillac).

Five-mile exhibition, by Thomas Fetch, with the 1,000-mile non-stop Packard. Time of five miles, 8:19.

Five-mile Point Breeze Handicap, run in two heats and a final; three to qualify; free for all; machines of any weight and horsepower Pope-Toledo; 45 seconds); second, Frank Yeager (24 horsepower Pope-Toledo; one minute); third, E. E. Hawley (60 horsepower Mercedes; scratch).

Second heat won by Charles Soules (24 horsepower Pope-Toledo); second, E. S. Morton (24 horsepower Peerless).

Final heat won by Charles Soules (24 horsepower Pope-Toledo); second, Frank Yeager (24 horsepower Pope-Toledo); third, E. E. Hawley (60 horsepower Mercedes).

Special ten-mile exhibition by Edward E. Hawley (60 horsepower Mercedes). Time, 11:35.

AT CHICAGO,

The FORD was in Front, as Usual

2 FIRSTS,

including the five miles open.

2 SECONDS.

"That Winning Way" of the FORD

is not limited to speed contests.
It wins all who "look into it."

FORD MOTOR CO., - - Detroit, Mich.

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LADIES RACE AT CHICAGO

Bride and Bride-to-be Add Breeziness to Meet —Fisher and Gulick Battle.

Success was writ large over the race meet held at the Harlem track, Chicago, by the Chicago Automobile Club on September 30 and October 1. There were four thousand spectators on the first day and six thousand on the second; nearly every race was well filled, and exciting contests, which were in doubt until the tape was crossed, resulted; and flights of speed, in one of which a world's record was broken, were made that aroused the spectators to the highest pitch of excitement. The public was pleased, the promoters delighted, the latter so much so that they announced that the meet would be made an annual affair. Some $3,000 was cleared, which President John Farson declared would be used as a nucleus for the building of the finest automobile clubhouse in America..

Several novel, almost sensational, features marked the meet. Barney Oldfield, who was at first looked upon as the star, elected almost at the last minute to go to Pittsburg instead. But Carl Fisher and Frank Kulick proved such thoroughly aceptable substitutes that Oldfield's non-appearance left no hiatus. Nevertheless, the club is determined to punish the famous chauffeur for his dereliction, and has, through President Farson, asked the A. A. A. to suspend him for life.

On both days contests between women took place. Friday was dubbed "Brides' Day," a special race taking place between Mrs. Dr. Reginald Smith, a bride of a week, and Mrs. L. T. Roenitz. Mrs. Smith had entered as Miss Neva Scott, but the day before the race she made public her marriage to Dr. Smith a few days previously. Miss Scott was the daring chauffeuse whose father, a well known Chicago merchant, died a few weeks ago, and she has figured in a collision and other disturbing incidents of late. She was alsc "matched" to go five miles against Dr. H. E. Thomas, but the match fell through. Saturday's events were also enriched by a race for women, in which Mrs. Smith, Mrs. Roenitz and Miss Pearl Laverty took part. Miss Laverty is the fiancee of John Farson, jr., and when something went wrong with her car just before the start she was obliged to borrow the latter's car. Being unaccustomed to this, she could do no better than finish third.

The racing honors were almost evenly divided between Carl Fisher, who drove his 45 horsepower Premier Comet, and Frank Kulick, who was at the wheel of his little 20 horsepower skeleton Ford. Fisher had a shade the best of it, however. He was twice beaten by Kulick on Friday, but turned the tables on the following day in a special race which required three heats to decide. All of them were hotly contested, the final especially being a hammer and tongs race that will be long remembered by those who saw it. It was in this heat that a world's record was made. The second mile was made in 0:59 4-5, which, with 1:01 1-5 for the first mile, made 2:02 for the two miles—record for middle weight cars. The previous best was 2:02 3-5, made by Joseph Tracy at the Empire City track on September 24.

Friday's events started with a three-mile race for cars of all classes, the machines to line up with a dead engine and passengers to dismount at end of each mile. This afforded great amusement to the crowd, the motorists in their eagerness running over the line and committing other breaches of the rules. The race was won by W. Knipper, driving a 24 horsepower Pope-Toledo, who took the lead at the start and had no trouble keeping it.

The second race, which was for runabouts, went to O. E. Schell, in a 12 horsepower Michigan, the only other starter, G. E. Holmes, using the same make of car, being badly beaten.

The first clash between the fast cars came in the third race for cars weighing 881 to 1,432 pounds, Kulick and Fisher coming to the starting point. The Ford passed the line at a fast rate, leading Fisher's Comet by a length. The machines raced the first lap in nearly the same position, Fisher gaining on his rival just a trifle and both passing the stand with a whirr of wheels and throwing the dust high in the air. At this stage it was even, but, hitting the homestretch on the third lap, the Comet missed several times and Kulick raced his machine an eighth of a mile into the lead. From then to the finish there was no change, Kulick being unable to gain further, but holding his advantage past the wire.

The four speediest cars of the meet—the Ford, Premier, Pope-Toledo and Apperson—came together in the five-mile event for cars of any motive power or weight. They were sent off with the Ford car crossing the line first, with the Premier second, the Pope-Toledo third, the Renault and the Apperson following. Kulick shot around the first lap in the lead, with the Premier close up, the Pope-Toledo, driven by Lytle, coming next, with the Apperson car following.

There was little change in the positions for the remainder of the race, the Ford car skimming over the ground at too fast a pace for any of the others, with the exception of Fisher's machine, which was acting its best, but was unable to overcome the Ford's lead.

There were thirteen starters in the ten-mile handicap, which was won by F. O. Tallman,



CARL FISHER, WHO WON THE MATCH RACE.

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in a Renault, who had an advantage of six minutes and a half over Kulick, who was on scratch. Ed Apperson, with his "Jackrabbit," was second, with two minutes and a half start, and third honors were taken by O. E. Schell, credited with eight and one-half minutes. The handicaps to the lesser lights were so generous that Kulick and Lytle had little chance to even finish one, three. The Ford machine made up a lot of ground and traveled the ten miles at a fast clip, cheered on by the crowd, but the handicap was too great.

Only two started in the pursuit race, Apperson and Fisher. The machines were started at different sides of the track, the race ending when either was passed. The Comet was much the speedier car, and Fisher succeeded in passing the Apperson after three and one-eighth miles had been covered. The summaries:

Three miles, for cars all classes, each car to line up with dead engine, and passengers to dismount at end of each mile—Won by W. Knipper (24 horsepower Pope Toledo); A. G. Schmitt (40 horsepower Apperson), second; J. A. Ellis (40 horsepower Apperson), third. Time, 6:49 1-5.

Five-mile, for light runabouts—Won by O. E. Schell (12 horsepower Michigan); G. E. Holmes (12 horsepower Michigan), second. Time, 10:28.

Five miles, for cars weighing 881 to 1,432 pounds—Won by Frank Kulick (20 horsepower Ford); Carl Fisher (40 horsepower Premier Comet), second. Time, 5:27.

Five miles, open to cars of any motive power or weight—Won by Frank Kulick (20 horsepower Ford); Carl Fisher (45 horsepower Premier Comet), second; Herbert Lytle (24 horsepower Pope-Toledo), third. Time, 5:29.

Two miles, for woman's championship of Chicago—Won by Miss Neva E. Scott (24 horsepower Locomobile); Mrs. L. P. Roenitz (24 horsepower Pierce-Arrow), second. Time, 4:24.

Ten-mile handicap—Won by F. O. Tallman (14 horsepower Renault), 6:30; Edward Apperson (24 horsepower Apperson), 2:30, second; O. E. Schell (12 horsepower Michigan), 8:30, third. Time, 16:38.

Pursuit—Won by Carl Fisher (45 horsepower Premier-Comet); Edward Apperson (24 horsepower Apperson), second.

Saturday's star event was the special five-mile heat race between Carl Fisher and Frank Kulick. It required the full three heats, Kulick winning the first, and Fisher the second and third. Kulick won the first heat by the most spectacular driving of the afternoon, passing Fisher on the far turn in the last mile after Fisher had led throughout. Amid tremendous excitement he flashed past his opponent, through the cloud of dust on the turn, swinging into the stretch three lengths to the good and holding that advantage to the wire. Time, 5:27 4-5 from a standing start.

The second heat brought out the best contest on the card, the men alternating in the lead, passing and repassing one another. On the far turn in the second mile Fisher struck the inner rail with his hind wheel, tearing out a board and nearly upsetting. He dashed on without faltering an instant, and won the heat by a scant length. Time, 5:29 2-5.

The fastest mile of the day was made in the third heat, Fisher doing it in 0:59 4-5 and winning the heat (and race) in much easier fashion than he did the second heat.

After the race Fisher went against the world's record of 0:59, for middle weight cars, but 1:01 4-5 was the best he could do.

The five-mile race for the Manufacturers' diamond cup also was taken by Fisher, in a field of four. Kulick was second, a furlong back. W. Knipper finished third. Time, 5:15 3-5.

Applause greeted the three contestants in the three-mile race for women. Miss Neva E. Scott, winner of Friday's race, had to be content with second place, the race going to Mrs. L. T. Roenitz, who won by a large margin in 6:12. Miss Pearl Laverty was third.

After the speed of the five-mile contests the slow race proved a novelty. In this the aim was to drive the machines as slow as possible for half a furlong without actually stopping, the last man winning. Only two contestants finished, the other going so slowly that they finally came to a standstill. F. X. Mudd, in a Cadillac, won, second place going to W. S. Austin. The summaries:

Five miles, for Diamond cup—Won by Carl G. Fisher (45 horsepower Premier Comet; Frank Kulick (20 horsepower Ford), second; W. Knipper (24 horsepower Pope-Toledo), third. Time, 5:15 3-5.

Five miles, for Chicago Automobile Club members—Won by Ed Apperson (24 horsepower Apperson); O. F. Weber (24 horsepower Pope-Toledo), second; W. S. Austin (35 horsepower Austin), third. Time, 6:28.

Three miles, ladies' race—Won by Mrs. L. T. Roenitz (24 horsepower Pierce-Arrow); Miss Neva Scott (24 horsepower Locomobile), second; Miss Pearl Laverty (24 horsepower Packard), third. Time, 6:12.

Five-mile special—First heat won by Frank Kulick (20 horsepower Ford); Carl G. Fisher (45 horsepower Premier Comet), second. Time, 5:27 4-5.

Five-mile special—Second heat won by Carl Fisher (45 horsepower Premier Comet), Frank Kulick (20 horsepower Ford), second. Time, 5:29 2-5.

Five-mile special—Final heat won by Carl Fisher; F. Kulick, second. Time, 5:10 2-5.

Five miles, for cars weighing 1,432 to 2,204 pounds—Won by Herbert Lytle (24 horsepower Pope-Toledo); W. Knipper (24 horsepower Pope-Toledo), second; L. D. Sheppard (18 horsepower Sheppard), third. Time, 6:22.

Half-mile slow race—Won by F. X. Mudd (6 horsepower Cadillac); A. S. Austin (35 horsepower Austin), second.

Ten-mile handicap—Won by C. Weber, 7:00 (24 horsepower Pope-Toledo); O. F. Weber, 6:30 (24 horsepower Pope-Toledo), second; Herbert Lytle, scratch (24 horsepower Pope-Toledo), third. Time, 15:44.

PITTSBURG ADMIRES OLDFIELD

He Proves the Star of Smoky City's Two Days Meet—Steam Cars Score.

Barney Oldfield was the central figure of the two days' race meet held by the Pittsburg Automobile Club at Brunot's Island, Pittsburg, Pa., on September 30 and October 1. His appearance had been well heralded, and the 13,000 people who crossed in boats to the island during the two days' racing went there principally to see him. He rewarded them by giving three thrilling and characteristically Oldfieldian exhibitions in his Peerless car—two on Friday and one on Saturday. In neither did he equal the existing records, the strong wind and the difficult turns making this out of the question. But he drove miles in and around one minute, and his rapid progress around the track evoked thunders of applause.

The meet itself was markedly successful. The programmes of both days were long and but for the snappy way in which they were run off by Referee W. C. Temple and his fellow officials, would have been drawn out to a tiresome extent. A number of good contests took place, the various races nearly all having, contrary to the usual experience, plenty of starters. Webb Jay was the only out-of-town driver of note—excepting Oldfield—but he was eclipsed by George E. Turner, a local man, who drove well and was remarkably successful.

In spite of the fact that he was one of the victims of a serious automobile accident in Allegheny a few days before, Turner drove his own cars in a style that was little less sensational than that displayed by Oldfield. Turner appeared in a gray coat, a slouch hat and with his face covered with strips of adhesive plaster. He was given a warm reception by the crowd, and was cheered and cheered again when it was seen that he knew a few things about the game which are supposed to belong exclusively to the professional members of the racing fraternity.

On the opening day, the first event was a five-mile race for cars up to 24 horsepower, with road equipment, but no passengers. It was won by George E. Turner, with a Peerless car, in 6:45½. There were six entries, the others being a Pope-Toledo, entered and driven by E. Kneeland; a Pope-Toledo, entered by W. N. Murray and driven by William Soules; a Pierce, entered by W. C. Temple and driven by George Ferrier; a Richard, entered and driven by O. E. Vestal; a White, entered by O. E. Vestal and driven by Webb Jay.

A two-mile race for automobiles up to 9 horsepower, with road equipment but no passengers, came next. There were three entries, George H. Flinn's Peugeot, which he drove himself, winning in 3:51¾. The other entries were a Cadillac, by A. L. Banker, driven by D. P. Collins, which took second place, and a Stevens-Duryea, entered

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by O. E. Vestal and driven by M. F. Leslie, which took third place. The first mile was made in 2:05¼ and the second mile in 1:46½. The Peugeot finished easily first and could have won by more than a mile had the driver pushed it to the limit.

In the third event, a ten-mile race for stock touring cars up to 35 horsepower, with road equipment and no passengers, George E. Turner captured first prize, making his second win for the day. He drove a Peerless and made the ten miles in 13 minutes and 14 seconds. W. N. Murray's entry, a Pope-Toledo, driven by William Soules, was second; a White, entered by O. E. Vestal, and driven by Webb Jay, was third.

A five-mile race for automobiles up to 16 horsepower, with road equipment and no passengers, was the fourth number on the card, and was won by a White steam car, entered by O. E. Vestal and driven by Webb Jay. The time was 8:35.

Next came the five-mile exhibition against time by Oldfield. The first mile was covered in 1:02 4-5, second in 1:01 3-5, third in 1:02 1-5, fourth in 1:02 3-5 and the fifth in 1 minute flat.

In the fifth event, a five-mile race, with no restrictions, Oldfield won, with a Peerless 24-horsepower car. The distance was covered in 6:37½. There were but two other entries in the race—O. E. Vestal with a White, driven by Webb Jay, and W. N. Murray with a Pope-Toledo, driven by E. H. Beldon. Vestal's machine was a 24-horsepower Pope-Toledo.

The last event of the day was a five-mile handicap, and had sixteen entries. The race was split into two heats, eight machines going in the first heat and eight in the second. The two first in each heat raced in the finals. The handicap was preceded by another exhibition race by Oldfield, in which he went three miles in the Peerless Green Dragon. He could not better his first time, the first mile being made in 1:04, the second in 1:01 and the third in 1:00 flat, making the time 3 minutes and 5 seconds for the three miles.

The summaries:

Five miles, for 24-horsepower cars, with road equipment; no passengers—First, George E. Turner (24-horsepower Peerless); second, William Soules (24 horsepower Pope-Toledo); third, Edward Kneeland (24-horsepower Pope-Toledo). Time, 6:45½.

Two miles, for automobiles up to 9 horsepower, with road equipment—First, George H. Flinn (9-horsepower Peugeot); second, D. P. Collins (8-horsepower Cadillac); third, M. F. Leslie (7-horsepower Stevens-Duryea). Time, 3:51¾.

Ten miles, for stock touring cars up to 35 horsepower—First, George E. Turner (24-horsepower Peerless); second, William Soules (24-horsepower Pope-Toledo); third, Webb Jay (15-horsepower White). Time, 13:14.

Five miles, for cars up to 16 horsepower, with road equipment—First, Webb Jay (15-horsepower White); second, E. Haas (15-horsepower Pierce). Time, 8:35.

Five-mile exhibition—Barney Oldfield (80-horsepower Peerless). Time, 5:09.

Five miles, open—First, Barney Oldfield (24-horsepower Peerless); second, Webb Jay (15-horsepower White); third, E. H. Beldin (24-horsepower Pope-Toledo). Time, 6:37¼.

Three-mile exhibition—Barney Oldfield (80-horsepower Peerless). Time, 3:05.

Five-mile handicap, open—First heat: First, G. Ferrier (24-horsepower Pierce); second, O. E. Vestal (20-horsepower Richard). Second heat; First, Barney Oldfield (24-horsepower Peerless); second, George E. Turner (24-horsepower Peerless). Time, 5:49 3-5. Final heat: First, Barney Oldfield (24-horsepower Peerless; scratch); second, G. E. Turner (24-horsepower Peerless; 10 seconds handicap); third, G. Ferrier (24-horsepower Pierce; 1:30 handicap). Time, 5:47.

The feature of the second day was the work of the White steam cars. They captured three events in splendid style, O. E. Vestal accounting for two of them and Webb Jay for the third. Oldfield, in the 24 horsepower Peerless, took the lead in the ten-mile race for striped touring cars, and before five miles were covered it was seen that he was gaining steadily on the 24 horsepower Peerless driven by G. E. Turner, and the 24 horsepower Pope-Toledo driven by M. H. Beldin. After eight miles had been covered Oldfield rapidly gained, and at the finish led Turner by half a mile, and Beldin was a full mile in the rear.

In the five-mile exhibition Oldfield quit after going three miles, owing to some of his cylinders failing to fire. The times were 1:04 3-5, 0:59 2-5 and 0:58 1-5.

The two-mile Cupid brought forth much amusement. In this event the drivers, who were in their machines, jumped from the seats at the crack of the gun, cranked their engines, and, after covering a mile, stopped and picked up a lady pasenger, then started and finished a second mile. O. E. Vestal, in a White steamer, easily won in 3:14.

The five-mile handicap was run in three heats and a final, the first in each of the preliminaries being eligible to compete in the final. In the first heat W. N. Murray, in a 10 horsepower Franklin, with a handicap of 20 seconds, easily won, with T. E. Gamble, in a 10-horsepower Autocar, with a handicap of 30 seconds, half a mile in the rear. The second heat went to Lester Wilson, in a 24 horsepower Pierce and with a handicap of 1:10, with E. Kneeland, in a 24-horsepower Pope-Toledo and a scratch man, second. The other contestants were distanced. In the third heat O. E. Vestal, in his 15 horsepower White steamer, had a start of almost a mile before Oldfield got under way, but Oldfield gradually cut down the lead and won the heat. In the final Oldfield, who was scratch, passed L. Wilson, in his 24 horsepower Pierce and who had a handicap of 1:50, at three miles, and then set out hot in pursuit of Vestal's White, which he did not overtake till near the finish, when he left it by several lengths before crossing the tape.

Summaries:

Two-mile, for cars up to 24 horsepower, with full road equipment, but no passengers—Won by Webb Jay (15 horsepower White steamer); G. E. Turner (24 horsepower Peerless). second; Ed. Kneeland (24 horsepower Pope-Toledo), third; William Soules (24 horsepower Pope-Toledo), fourth. Time, 2:46.

One-mile, for cars up to 9 horsepower, road equipment, but no passengers—Won by D. P. Collins (8 horsepower Cadillac); George Finn (9 horsepower Peugeot), second; J. A. Pretch (7 horsepower Stevens-Duryea), third. Time, 2:12 3-5.

Two-mile Cupid—Won by O. E. Vestal (15 horsepower White); G. E. Turner (24 horsepower Peerless), second; Edward Kneeland (24 horsepower Pope-Toledo), third; Lester Wilson (24 horsepower Pierce), fourth. Time, 3:14.

Two-miles, for cars up to 16 horsepower, road equipment; no passengers—Won by O. E. Vestal (15 horsepower White); George Stranahan (10 horsepower Franklin), second; A. L. Banker (15 horsepower Pierce), third; T. S. Gamble (10 horsepower Autocar), fourth. Time, 3:35.

Ten-mile, for touring cars up to 35 horsepower, stripped—Won by Barney Oldfield (24 horsepower Peerless); G. E. Turner (24 horsepower Peerless), second; M. H. Beldin (24 horsepower Pope-Toledo), third. Time, 10:40 1-5.

Five-mile handicap, open—First heat won by W. N. Murray, 0:30 (10 horsepower Franklin); T. E. Gamble, 0:30 (10 horsepower Autocar), second; time, 8:46. Second heat won by Lester Wilson, 1:10 (24 horsepower Pierce); E. Kneeland, scratch (24 horsepower Pope-Toledo), second; time, 7:34 3-5. Third heat won by B. Oldfield, scratch (24 horsepower Peerless); O. E. Vestal, 1:25 (15 horsepower White), second; time, 5:26 3-5. Final heat won by B. Oldfield, scratch; L. Wilson, 1:50, second; O. E. Vestal, 0:25, third.

Chicago Seeks Oldfield's Scalp.

President John Farson, of the Chicago Automobile Club, is wroth with Barney Oldfield, and intends to have his head for alleged breach of contract, in not appearing in the Windy City last week. He has demanded of the American Automobile Association that Oldfield be suspended for life, and is quoted as saying that unless such action is taken the Chicago club will withdraw from the A. A. A.

It appears that Oldfield's manager signed contracts with both the Chicago and Pittsburg clubs. Then, the manager claims, he appealed to Chairman Pardington of the A. A. A. racing committe to know what to do, and was told to have Oldfield drive at Pittsburg.

The matter came up in this city on Tuesday, when Secretary Spangler of the Chicago club appeared at the meeting of the A. A. A. directors and asked for Oldfield's suspension. It was decided, after a lengthy discussion, to refer the matter to the racing board.

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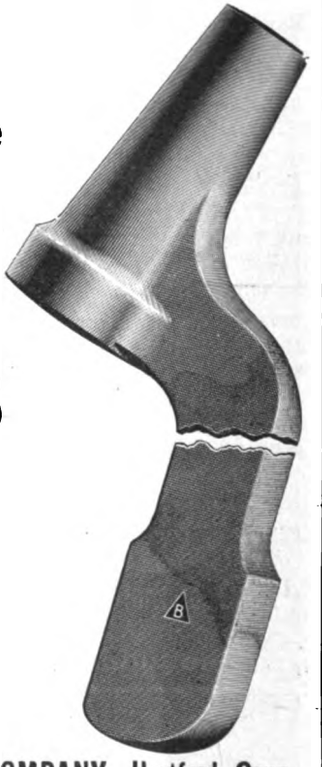
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INDIA'S FIRST CONTEST

Takes Place Christmas Week Over 883 Miles of Roads Near Bombay.

Some further particulars are now available of the 883 miles reliability contest which the Motor Union of Western India are arranging to take place between Delhi and Bombay during Christmas week this year.

The objects of the trial as propounded by the Motor Union of Western India are: (1) To bring prominently before the Indian public the fact that motor cars have been brought to such a stage of perfection that they are eminently suitable for use in India, more especially for district work; (2) to induce tourists visiting that country to bring their cars with them, and thus take advantage of the magnifcent roads and perfect weather, which are invariably assured to the traveller between the months of October and March; (3) to call the attention of manufacturers in Europe and elsewhere to the wants of India in the matter of motor cars.

Following is a statement of the approximate distances to be traversed, although the committee reserve the right of altering these to any extent, as may be found desirable:

	Miles.
Monday, Dec. 26, Delhi to Agra	128
Tuesday, 27th, Agra to Gwalior	71
Wednesday, 28th, Gwalior to Goona	127
Thursday, 29th, Goona to Sarangpur	94
Friday, 30th, Sarangpur to Indore	74
Saturday, 31st, Indore to Dhulia	145
Sunday, Jan. 1, Dhulia to Nasik	97
Monday, 2d, Nasik to Bombay	147
Total	883

The following rules in connection with the cup presented by the Gaikwar of Baroda have been drawn up by the committee of the Motor Union of Western India:

1. The race for the cup is to be one judged by reliability only, although it is probable that other prizes will be given for (a) the car in best condition after the trial, (b) the car best suited for district work in India and (c) absence of noise, etc.

2. The trial will be open to any motor vehicle privately owned, with the exception of motor bicycles, tricycles and quadricycles (for which there will be separate competition).

3. All cars competing shall be driven by amateurs.

4. Each car shall carry an observer, who shall faithfully record any stops of the engine or car while travelling between Delhi and Bombay.

5. The cup will be presented outright to the owner of the car which makes the whole journey with the least number of unauthorized stops, and in the event of any cars tieing for the cup, such cars will undergo further trials for hill climbing or otherwise, as may be decided by the committee, in order to determine which car is the most reliable under all conditions.

6. The distance between Delhi and Bombay, approximately 880 miles, is to be traversed by the cars competing between December 26 and January 2, inclusive.

7. The timing of the cars between any two places will be made on a basis of twelve miles an hour as a minimum and thirty miles an hour as a maximum speed.

8. The entrance fee is to be 50 rupees a car (three guineas), and the fees are to be devoted to making provision for the race.

9. The maximum number of marks to be allotted shall be 1,000, and one mark is to be deducted from this number for every minute during which the car is stopped on the road from any cause whatever, other than of traffic, level crossings, rivers or such impediments as the committee may specially exempt. No repairs, adjustments or alterations can be made to cars or engines without loss of marks during the transit of cars from place to place. In the case, however, of stops due to tire troubles, only half of a mark a minute will be deducted.

10. No tools or spare parts of any kind are to be brought on to the car during the trial without disqualification, but there is no limit to the number of tools and spare parts which a car may carry during the trial, provided such are upon the car at the time of its departure from Delhi.

To Form Chauffeurs Into Unions.

"Do you belong to the union?" will soon be the question asked of chauffeurs if plans laid at Indianapolis, Ind., do not miscarry. The International Brotherhood of Teamsters, of that city, has decided to organize the chauffeurs of the country, and local unions are to be established in all the principal cities and to be affiliated with the teamsters' organization.

It is said that the chauffeurs are really drivers of vehicles, but under another name, and that for this reason they should belong to the organization of teamsters. It is said that there has been talk of the chauffeurs organizing a union of their own, and for this reason the teamsters determined to organize them and claim jurisdiction over them.

Tray Made to Carry Trunks.

An ingenious device for carrying bags or even a small trunk has been brought out by an English maker. It consists of a strong yet light tray, which is arranged to slide under the floor board of the tonneau, and, when thus put away, is entirely out of sight, as the front edge of the tray comes flush with the carriage work. When in use a pair of straps are employed for supporting the weight of the free end. The increasing popularity of long distance travelling, and the advantages of having some, at least, of the personal luggage on the car, make the utility of a carrier at once apparent.

Fast automobiles for inspection and emergency work have been ordered by the Colorado & Southern Railroad for the use of division officials on their tracks in Colorado.

JERSEY LICENSE MILL BUSY

Last Week in September Broke All Records—Total of Registrations is 7,349.

When the office of the New Jersey Secretary of State closed for the month on September 30, the automobile department was shown to have been the busiest for the last week of any in its history, since the law was passed and signed, in March, 1903.

Commencing Monday morning of last week, the clerks in this department worked all day, and sometimes into the night, to get out the licenses. It is the rule of this department that all applications which are regular in form must be attended to the day received. This rule was put in force because the State law will not allow any one a minute to operate his machine in the State without a license. So as not to work hardships to new purchasers of automobiles, the Secretary of State gets the license to the applicant as soon as the mail can carry it.

The great rush for licenses the last week was due to the wish of Pennsylvanians and New Yorkers to visit the Interstate Fair, as all the applicants wanted licenses for touring cars, and wanted them in time to visit the fair. One especially anxious man asked if the Secretary could not telegraph his license.

In the palmy days of licensing automobile owners to operate machines fifty licenses a week was a big week's work. This number was exceeded last week, when seventy licenses were issued.

The total number of licenses issued to date is 7,349, and fully 79 per cent are for touring cars. The applicants of last week were for the most part people who reside out of the State. There was one application from a Louisiana man, but he was stopping in Baltimore, and another application from a Vermonter. He was in the City of Brotherly Love.

Regarding the proposed revision of the automobile law, the office is in receipt of letters from people who agree with Senator Bachelor, of Essex, that it would be well to amend the law so that a person touring in New Jersey is compelled to remove the license numbers of other States from his machine. It is contended that constables make mistakes and cause all sorts of annoyance by stopping autoists to be sure that among the many numbers on their machines one is the simon-pure Jersey brand.

Anything which will keep the constables from annoying is favored by the correspondents.

Jersey Clubmen Secure Quarters.

Rooms in the building at Harrison and Railroad streets, Brick Church, have been secured by the Automobile Club of New Jersey. The building contains a garage, which is at the disposal of the members.

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OBJECT LESSON IN ROADS

Canadian Warden Inaugurates Improved Highway System with Run of Motorists.

The county of Wentworth, Ontario, has a wise warden, Edward Kenrick, who recently celebrated the practical inauguration of a good roads system by the largest automobile run that has ever taken place in Canada.

The agitation for good roads begun by the government some years ago took a firm hold in Wentworth County, and the first fruits of it were seen on this occasion by a number of interested visitors. Under the good roads act the county of Wentworth has purchased a number of toll roads and secured as a government bonus one-third of the cost. The expenditure for the permanent improvement of these roads has been considerable, and in view of the nature of the work the government has consented to bear the same proportion of the extra outlay. Already some fifty miles of highway in the county have ben built up in accordance with the most modern ideas of roadmaking, and the celebration of the accomplishment was quite in keeping with its performance.

Warden Kenrick, who wished to show off the new roads, knew that they would be most welcomed by the touring automobile parties who visit the Wentworth district to enjoy the exquisite scenery, and also that the roads could best be viewed from an automobile. He therefore enlisted the aid of his motorist friends and got together a party of seventy persons, under the care of Dr. P. E. Doolittle and S. O. Greening, presidents of the Toronto and Hamilton Automobile clubs.

The party left Hamilton early in the day and rode over miles of the finest highway to be found in any country. A straight run was made around the arm of the bay to Watertown, and then along the Sydenham Road to Greensville, after which the party strung down the side of the ridge to Dundas. The tour had evidently been well advertised, for at every corner the rural residents and their families were in waiting to give the tourists a cheery salute, and in the villages all of the available flags were hung out.

At Ancaster, the home of the warden, about seven miles away, the entire populace turned out, and there was a general ovation. From this village the party enjoyed an ideal run down to the city of Hamilton, over a road which, like all of the other county works traversed during the day, showed evidence of careful and admirable construction. There was barely time for luncheon at the Waldorf in Hamilton before the run was resumed, and the party started for Stony Creek, where another welcome was given them. From there to Elfrida, as on other sections of the route, a scene of great beauty stretched out to the water beneath them. At Mountain View the warden entertained his guests at afternoon tea, at which many congratulatory addresses were made.

French Heavy Wagon Tests Now On.

Valuable and extremely practical data should be obtained as a result of the heavy wagon tests, which were scheduled to start this week in the neighborhood of Paris, under the supervision of the French Minister of War.

The competition is confined entirely to vehicles suitable for the transport of men and stores for army purposes, constructed in France by French manufacturers. The tests will occupy eight days, during which a distance of 510 kilometres will be covered over four different routes. Both steam and internal combustion motors are qualified to take part, and the great point to be sought for in the internal combustion motors is that they shall be able to use either spirit, heavy oil, pure alcohol or a mixture of alcohol equally well. Any vehicle coming up to such a pitch of perfection will specially receive the attention of the jury.

The total weight of each vehicle fully laden must not exceed 3,400 kilograms, of which 1,000 kilograms at least must be useful load. Electric ignition must be employed, magneto for preference, and each vehicle must have at least three speeds and a reverse gear, with minimum and maximum speeds of 3½ and 18 kilometres an hour, respectively. The fuel tanks must provide for at least a 75 kilometre run without replenishing.

Gliddens Sail for Honolulu December 9th.

Although the Charles J. Glidden party reached Vancouver, B. C., several weeks ago, they will not enter upon the next stage of their journey around the world for some little time. Passage has been booked on the Canadian-Australian steamship Moana, which sails from Vancouver on December 9, arriving at Honolulu on December 17, and Luva, in the Fiji Islands, on December 27. On this island a drive of two hundred miles has been planned, after which the boat will be taken to Auckland, New Zealand, due there on January 11.

The New Zealand drive begins at Auckland and terminates at the southern end of the south island, at Invercargill. Steamer will be taken to Tasmania, and from Hobartown a drive of three hundred miles will be made. From Melbourne the Australian drive of two thousand miles will be started. After this comes the Philippines, China and Japan, then the Asiatic archipelago, Ceylon and India, crossing the corner of Asia and through Europe to London in 1906.

Search for a Word.

There is no suitable word in the English language to compare with the French en panne (which, by the way, is borrowed from nautical circles, and means "lying to"). "Breakdown" is the word usually employed, but this hardly describes such a trouble, for instance, as a sooty plug, a cut tire, a run down battery and many another of the little ills that motors are heir to. There is no suggestion, in the remotest degree, of "breakage" in any of the above cases.

TO BRAVE DEATH VALLEY.

California Professor Plans Automobile Trip Through Ill-omened Region in Search for Gold.

The exploitation of the grewsome Death Valley by the automobile will soon be an accomplished fact. In addition to the installation of a service of motor transportation for hauling borax, in place of the twenty-mule teams heretofore used, a California professor is going prospecting for gold in an automobile.

Professor Gilbert E. Bailey, of San Francisco, is the adventurer in question, and he will search for gold mines in the Death Valley region, which has proved fatal to hundreds of prospectors because of the intense heat and the difficulty of carrying across it supplies of food and water. Professor Bailey's automobile is a strong runabout, to which he has made a number of attachments for carrying implements and supplies. He will test its capacity by some preliminary tests in Southern California. Professor Bailey, who is an expert mining engineer and assayer, will follow up the valley of the Amargosa River and will thoroughly explore Funeral Mountains and Furnace Creek.

Every one knows this region is rich in minerals, but parties that have ventured into it even in winter are forced to carry a large outfit to guard against death by thirst. For three prospectors eight horses are necessary, six being devoted to hauling foodstuff. This makes travel slow.

Professor Bailey will follow a new road into Death Valley made by the Pacific Coast Borax Co. This company will supersede the old twenty-mule team by traction engines and trains of wagons. Recent discoveries of rich ore near Furnace Creek show that Death Valley has never been thoroughly prospected.

Profit in the Paying Passenger.

The newest development in the automobile industry, according to a London dispatch, is taking the paying guest as passenger.

It is claimed for the idea that there is no more pleasing method of seeing Great Britain and spending a day or two at historic spots by the way. The cost runs into from $10 to $20 a day, according to the country visited, but the paying guest is privileged to discharge his own hotel bills and contribute a proportionate share to the cost of luncheons and teas on the roads.

One automobilist who recently took three Americans as paying guests on a few weeks' tour cleared $400 on the trip after paying his own and the chauffeur's expenses.

Pledged Auto at Paris Pawnshop.

For the first time in the history of the Mont de Piete, Paris, pawnbroking department an automobile was pawned with it recently. The proprietor drove his automobile slowly into the courtyard of the pawnbroking office in the Rue Servan, and, after satisfying the official the machine was really his property and in goood condition, was allowed an advance on it.

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The Week's Patents.

770,726. Running Gear. Albert F. Madden, Newark, N. J., assignor to Vehicle Equipment Company, New York, N. Y., a corporation of New York. Filed January 12, 1904. Serial No. 188,683. (No model.)

Claim—1. The combination with an axle and a vehicle body yieldingly supported thereby, of a pedestal constituting a guide for the axle, carried by the body midway of the axle, means engaging the guide to prevent transverse displacement of the axle relative to the body, pivotal connection between the axle and said means to permit vertical movement of the axle ends independently of each other, and a pedestal at each end of the axle forming guides or rails therefor, as set forth.

770,728. Running Gear for Vehicles. Albert F. Madden, Newark, N. J., assignor to Vehicle Equipment Company, New York, N. Y., a corporation of New York. Filed March 10, 1904. Serial No. 197,608. (No model.)

Claim—1. The combination with an axle and a vehicle body yieldingly supported thereby, of a pedestal constituting a guide for the axle, carried by the body midway of the axle, means carried by the axle and engaging the guide to prevent transverse displacement of the axle relative to the body, pedestals at the ends of the axle forming guides or rails therefor to prevent longitudinal movement of the axle relative to the body, braces connecting the lower parts of the pedestals, and diagonal braces between the body and the lower part of the central pedestal, as set forth.

770,820. Variable Speed Transmission Gearing. Thornton B. Rennell, Denver, Col. Filed July 3, 1903. Serial No. 164,119. (No model.)

Claim.—1. In a variable speed transmission gearing, a main driving shaft, an auxiliary driving shaft, a transmission shaft and clutch mechanism for connecting the respective shafts, as described, a shaft arranged to be driven by said connected shafts, and gear wheels arranged upon certain of the connected shafts, in combination with a swinging support, a counter shaft with gear wheels carried by said support, and means for oscilating said support to bring the gear wheels of the counter shaft into and out of mesh with the gear wheels of the connected shafts.

770,840. Thrust bearing. Walter C. Baker, Cleveland, Ohio, assignor to the American Ball-Bearing Company, Cleveland, Ohio., a corporation of Ohio. Filed July 25, 1901. Serial No. 70,193. (No model.)

Claim.—1. In combination with a shaft, a thrust-bearing comprising a pair of rings encircling the shaft, and rings having their inner faces recessed, compressible material arranged in one of said recesses, a second ring bearing on said compressible material, means arranged in the recess of the other of the first-named rings, and formed with a ball-race, means arranged in the ring bearing on said compressible material, and formed with a ball-race, and balls engaging said ball-races, substantially as described.

770,896. Mold for tires. Charles G. Fawkes, Denver, Col., assignor to The Fawkes Rubber Company, Denver, Col. Filed September 19, 1903. Serial No. 173,910. (No model.)

Claim.—1. A tire mold provided with pins radially disposed and projecting from the inner periphery of the mold into the hollow of the latter.

2. A tire mold composed of two members, one of which is provided with pins or projections radially disposed and adapted to form recesses on the inner periphery of the tire formed or vulcanized therein.

770,927. Ignition plug for explosive engines. William Roche, Jersey City, N. J. Filed December 4, 1903. Serial No. 183,718. (No model.

Claim.—1. An ignition plug for explosive engines, comprising a tubular metal plug the interior surface thereof at the inner end being bevelled, a tubular insulating plug therein the exterior surface at the inner end thereof being bevelled, a tubular insulating sleeve fiting within said insulating plug, and a conductor within said insulating sleeve projecting out of the inner end thereof, the inner ends of said conductor and said metal plug serving as sparkling terminals, substantially as described.

771,077. Change-speed gearing. Abraham B. Landis, Waynesboro, Pa. Filed April 18, 1902. Serial No. 103,594. (No model.)

Claim.—1. In a speed-changing gear, the combination, of two sets of gear wheels forming two cones mounted on parallel shafts and engaging with each other, said parallel shafts, one of which has its gear whels rigidly secured thereon, and the other of which is hollow and has its gear wheels mounted loosely thereon, sliding locking devices formed with central transverse ways with cam faces on each side thereof mounted in transverse perforations in said hollow shaft and adapted to engage notches in the hubs of said gear wheels, and a rod within said hollow shaft mounted to slide in the central ways in said locking devices and provided with a series of operating cam faces arranged to engage the cam faces of said locking devices successively to move one to engage its gear wheel and to lock all of the others out of engagement with their wheels, whereby only one wheel can be locked into engagement with the shaft at a time, substantially as set forth.

771,095.—Gas engine. Eugene C. Richard, Detroit, Mich., assignor to Buick Manufacturing Company, Detroit Mich., a corporation of Michigan. Filed February 18, 1902. Serial No. 94,682. (No model.)

Claim.—1. In an explosion engine, the combination with the cylinder, a valve stem passing outward through the head of said cylinder, a spring sleeved upon said stem, a cupped collar secured to said stem and forming a bearing for said spring, an outwardly projecting flange in said collar, a bifurcated lever having antifriction rolls bearing upon said flange on opposite sides of said collar, a jug on said head to which said lever is pivoted, a push rod slidingly secured in a bearing at the side of said head and an antifriction roll secured to the opposite end of said lever bearing against the end of said push rod.

771,156. Valve for pneumatic tires. John E. Keller, jr., Litchfield, Conn. Filed December 29, 1903. Serial No. 186,986. (No model.)

Claim.—1. In a structure of the character specified, a valve tube, a valve mechanism including a tubular valve casing and a valve plug secured in the outer end of said casing, a packing washer disposed between the end of said casing and the upper portion of the mechanism in said valve tube with the packing washer in contact with the bore of said valve tube.

771,190. Pneumatic tire guard. Laurent Vanderperre-Simon, Brussels, Belgium. Filed July 17, 1903. Serial No. 165,988. (No model.)

Claim.—1. A pneumatic tire having an air tube and a protecting tissue between said tire and tube, with propecting bearing plates secured to the outer tube and to said protecting tissue.

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A loss of power in a low tension system magneto fired engine may often be traced to the tappet giving the "tweaker," as it is called, too much of a "tweak." The tappet lifter, which causes the electric circuit to be broken inside the cylinder, has a definite lift, but as the tweaker is not directly connected to it, the spark may be adjusted in a manner analogous to the setting of the sparking plug points. This is done by screwing the threaded end of the tappet rod into or out of, as the case may be, the internally screwed lifter, which is directly acted upon by the cam. The adjustment should be such that the tweaker makes a rapid jump from the insulated point, but the arc formed should not be too long, otherwise an attenuated spark is produced, which has poor ignition qualities. On the other hand, if a short, quick break is given, a fine, fat, hot spark results, and the engine pulls double the power.

Now to adjust the tappet to produce the latter result, the engine should be turned round with the starting handle until the tappet lifter is at its highest point. Then screw down the tappet rod until there is a distance of about four millimetres between the underside of the tappet head and the tweaker. Next turn the engine until the tappet falls and hits the tweaker; this should be just before the tappet reaches its lowest point, at which it should be possible to pull the tweaker down a lot with the fingers. If a cylinder is found to be firing badly and not pulling as well as its companions, if of the multi-cylinder type, slack off the pinching screw at the head of the tappet lifter and screw up the tappet one turn; the correct movement is counter clockwise. If no better results follow, continue screwing up until nothing happens, and then start screwing down by one complete turn, for three turns, and then by half turns until the correct spark is obtained.

This, of course, entails a lot of starting up of the engine, but, once found, no further adjustment should be necessary for a long period.

Heated Shafts Need Prompt Attention.

The symptoms which indicate the tightening of the piston in the cylinder as a precursor to seizing always proclaim themselves unmistakably. On hearing a shrill creaking from the mechanism it is evidently best to stop and ascertain the cause, and by touching the various bearings the one which is heating is quickly found. An abundance of lubrication, and, while waiting an opportunity to dismount the bearing for inspection, slight loosening of the bushes are the steps to be adopted.

When a shaft heats to an abnormal extent it is better to dismount it on the first available occasion to find out its condition. Should it be found scored with traces of seizing, polishing by means of a lathe should be resorted to, or, in the absence of a lathe, by fine emery cloth, about No. 1 or No. 0. Should the bushes also be marked, they should be lightly rubbed with a very fine semi-circular file, and afterward polished with emery cloth.

Brakes Make Skidding Worse.

When the car skids, remember that putting on the brakes hard will make matters worse. About the only thing which can be done is to take out the clutch, keep the brakes gently on and steer the front of the vehicle in the same direction as the back tends to go. When driving a car fast on a slippery road it is best to drive close to the curb. Then, if one wants to stop suddenly, the front wheels should be turned slightly away from the curb and the brake applied. The back wheels will then slide against the curb, and cannot, of course, skid any further.

Heat Hurts Batteries and Coils.

Dry batteries and induction coils should be kept as far as possible from heat. The cement used in sealing dry batteries melts rather easily, and if this is permitted mysterious troubles may result. In the case of the induction coil, the paraffine wax frequently used for insulation is very apt to melt and run out, and will not only leave the coil in bad condition, but will, if it gets on the vibrator or on any of the contact surfaces, interrupt the flow of electricity and so stop the motor.

Easy Starts Spare the Gears.

The low speed gear should invariably be used when starting the car, as this saves both the clutch and the transmission. Cars having powerful motors may be started on the third speed, but this does not do the vehicle any good and may do it a great deal of harm. A practice which should be avoided as much as possible, and which is responsible for many broken gears, chains and twisted shafts, is that of "racing" the motor before the car is started and then dropping the clutch in.

To Test Platinum Points.

When misfiring is persistent, do not think of your "platinum" points as Cæsar wished to think of his wife. Alloy creeps insidiously into everything one hammers or eats, into every crevice of food and manufacture, and why should those tiny contacts escape? Very likely they are not platinum at all, but are as plated as your tablespoons. Touch it with sulphuric acid; if it turns color it is German silver. Get at it with a punch and rivet in a bit of the right stuff.

Declutch on Passing Rough Places.

When about to pass over holes in the road or short patches of loose stones, the car should have sufficient momentum to carry it over such rough places so as to allow the clutch to be disengaged. This prevents racking the mechanism.

WHEN THE SHAFT BINDS

Temporary Repairs Can be Made With a Big Wrench—Lathe Work Necessary Ultimately.

Bent shafts can only be produced by a violent shock or collision. A strong steel wrench a foot or fourteen inches in length will not only serve for the large nuts of the motor wheels, but will be useful should a shaft get out of alignment.

The method of employing it is simple, and needs no lengthened description; merely seize the part adjoining the bend between the jaws of the wrench and act on the latter gently till the shaft is brought back to line. Should the bent shaft have any great length of overhang it will be found advisable to hold it with another wrench or lever on the other side of the bend, so that the effects of the first may not be felt beyond the point to be straightened. Sometimes it will be found preferable to dismount the shaft for the purpose of straightening, but on no account must a hammer be used for the purpose. Such a proceeding involves risk of breakage, or at least further deterioration of the shaft.

When it is possible the shaft should be straightened on a lathe by a competent mechanic, because, of course, by the proceeding specified above it is not possible to attain the necessary perfection.

Dark Room Tests for Short Circuits.

Sometimes "shorting" is not easily discovered, but it cannot escape the careful investigator for long. If the terminals and every inch of every wire are examined, and it is seen that the insulation is perfect and that not even a single strand from any naked end is inviting the current to escape by a short cut, there can be no short circuiting. Or so it would seem.

But it is sometimes difficult to decide by appearance alone whether the insulation, especially that inclosing the secondary wire, is perfect or not. The best method of discovering a short circuiting is to take your machine into a darkened room and set it slowly in motion on the stand. It is hardly likely there will be any permanent contact anywhere—in which case no light would be visible—but some intermitting spark will indicate the whereabouts of the leak.

Temporary Repairs for Broken Pipes.

A metal pipe, if broken off, can be temporarily repaired by connecting the broken ends with rubber tubing or hose of the right size and binding the ends tightly with wire or twine. A mere leak may be stopped with tape, if small, or with a piece of patching rubber held down by tape, if larger. In making use of rubber cement, patching rubber, tire tape, rubber tubing or anything made of or containing rubber in any form, bear in mind that rubber is soluble in gasolene and will not hold it long.

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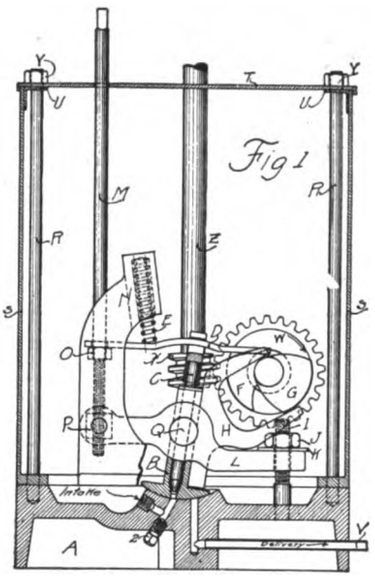
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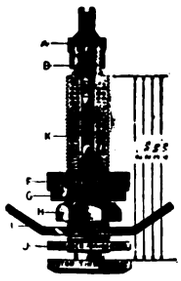
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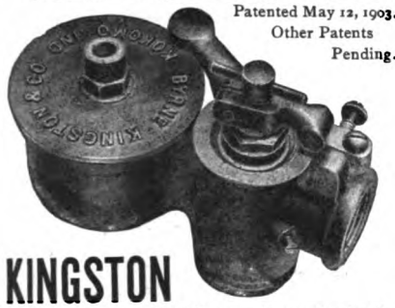
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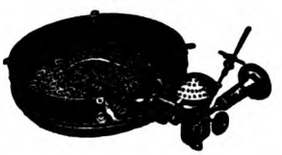
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The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

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THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,

9 Packard Ave., Racine, Wis.

THE DUERR-WARD CO., No. 1787 Broadway, New York Distributors.

ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor.

Cleveland Dust Shield



Does not interfere with entrance to tonneau. Made to fit any car. Easily removed. Rolls up into brass shield and out of the way when not in use. Price, complete, $12.00.

THE ACME MUFFLER for any horse power. Absolutely the most perfect muffler on the market. Correspondence solicited.

ACME MOTOR CAR & REPAIR COMPANY, Cleveland, Ohio.

STAMPINGS BEAT FORGINGS.

There's a reason—less labor, less weight, less cost—more all-round satisfaction—more profit. Then why not write us for particulars?

THE PARISH & BINGHAM CO.,

Mfrs. of the Indestructible P. & B. Wheel,

Cleveland.

Side Movement of Tires.

Whether owing to wrong construction in cross section or insufficient air pressure, the more a tire sways or rolls on the rim the greater the tendency to side slip; for if the tire is of such a section that when in use it is rigid enough to withstand a severe lateral strain—that is, to check the car in the initial stages of a side movement by causing immediate friction on the road, without allowing the car to roll sideways on the tire—it will more often than not stop any serious side movement, which increases in power as the weight of the car gathers momentum sideways, and which frequently becomes so great that the back of a car in swaying sideways drags the front wheels round and prevents any possibility of steering the vehicle.

To Preserve the Cylinder.

If a valve or the porcelain in a sparking plug breaks, care should be taken to ascertain whether any of the pieces have lodged in the cylinder. If so, they should be removed before attempting to run the motor, as it does not take a piece of steel or a few chips of hard porcelain a very long time to so cut a cylinder that it must be renewed. As a rule, cylinder walls are not of sufficient thickness to permit reboring if it is necessary to take off more than the merest suspicion of a cut, and a few chips caught by the piston can make fairly deep grooves the entire length of the stroke.

Popular Wedding Trip.

A popular wedding trip is to take a D. & C. steamer to Mackinac Island.

If you want a delightful wedding trip, where you are not likely to meet acquaintances, take one of the new D. & C. steel steamers to the island of cool breezes. Staterooms and parlors reserved 30 days in advance. Send 2c. for illustrated pamphlet.

A Sharp Eye Ahead!

EYE-FIX TRADE MARK

THE GREAT EYE REMEDY

Driving an auto will be more of a pleasure and less of a strain on the eyes if you use EYE-FIX. This tried and true remedy strengthens weak eyes, cures watery eyes and allays irritation caused by wind and cold. It is an effective tonic for eyes that are dull, tired or overtaxed—makes them bright and clear—removes the aches and pains. Quickly cures sore eyes and instantly soothes eyes that are injured by particles of dust, etc. Carry EYE-FIX in your pocket, a small vial and a dropper in a neat case. Use it in a jiffy—two drops is a dose. All druggists and opticians sell EYE-FIX at **50c.**

Every dealer in automobiles and sundries should have EYE-FIX in stock. He will find a good sale for it among his patrons.

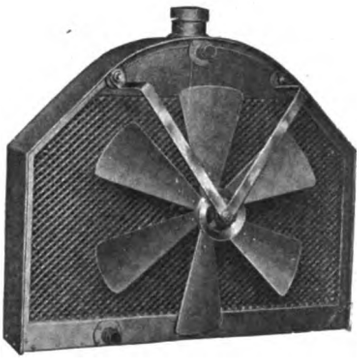
Inquiries cheerfully answered, and we send a trial bottle, post-paid, for 10c.

EYE-FIX REMEDY CO.,

Dept. S., Detroit, Mich., U. S. A.

WHITLOCK COOLERS

For 1905.



Experiments are Expensive.

Sometimes they are not only expensive, but fatal. This is especially true in motor car construction. It is, therefore, always on the side of safety and good judgment to adopt those parts which have stood the test of time and have acquired for themselves a reputation based upon actual merit Price is not always the most important consideration.

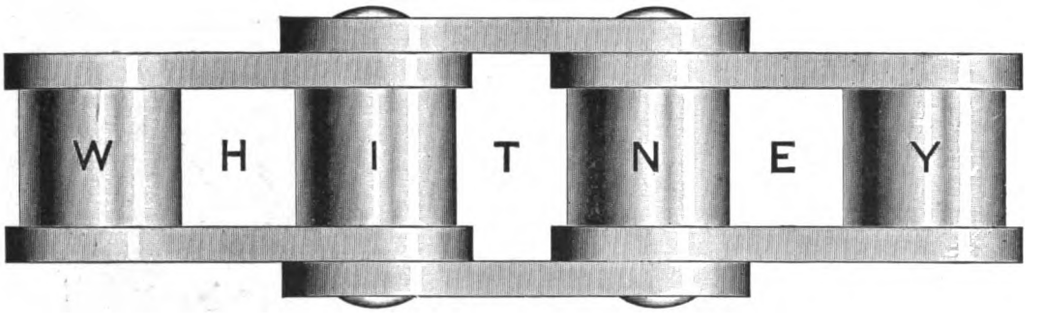
Therefore, in deciding what cooler you will use for 1905, select one with a reputation.

The Whitlock Cooler has stood the test of time. It has been used for two seasons by the majority of American builders of touring cars. Our experience in this line is now unequalled. Write us about your cooler proposition.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT

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ROLLER CHAIN "STANDARD" CONTEST ABOUT OVER.

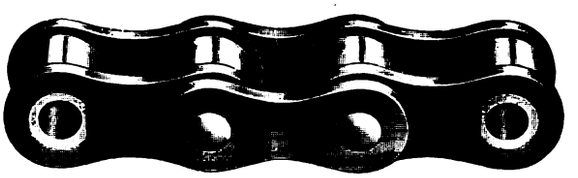
Question Settled by Road Tests and Remarkable Records.

IT LOOKS VERY MUCH AS IF

"WHITNEY" CHAINS AND STANDARDS

WERE NOW USED EXCLUSIVELY
ON THE FOLLOWING CARS:

"CADILLAC" "RAMBLER" "KNOX" "FORD" "FRANKLIN"
"COLUMBIA" "POPE-HARTFORD" "STEARNS" "ACME"
"QUEEN" "WAYNE" "MITCHELL" "OLDS RUNABOUT"
"PIERCE-RACINE" "MOLINE" "AUTO-CAR EQUIPMENT"
"SOMMER" "MATHESON" "BAKER" "CORBIN"
"TOURIST" "GAETH" "SPRINGFIELD" "MANHATTAN"
"WORTHINGTON" "LENAWEE" "COTTA" "GIBBS"
"ELWELL-PARKER" "WESTERN ELECTRIC" "SNELL"



We Never Expect to Stop Making Improvements.

THE WHITNEY MFG. CO., Hartford, Conn.

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Oldsmobile



The Best the Field Affords

By Reason of

1—Oldsmobile motor—ripe product of over twenty years successful experience.

2—Simplicity of mechanical construction. The absence of all gaskets. Cylinders and cylinder heads cast integral. Bearings self-oiling; cam shaft gearing entirely encased.

3—Easy to start—absolute impossibility of "kicking back" in starting.

4—Style, comfort, power, plenty of speed.

5—Light Tonneau Car equipped with tilting steering post, divided front seat, honey-comb radiator, etc.

On the recent Automobile Tour—from New York to St. Louis—the Oldsmobile Tonneau Car easily held its own with cars costing from three to fifteen times as much. It maintained an average speed of twenty miles an hour over the entire trip.

Oldsmobile Standard Runabout, $650.00; Oldsmobile Touring Runabout, $750.00; Oldsmobile Light Tonneau Car, $950.00.

All prices F. O. B. Factory. Catalogue Free. Address

Olds Motor Works,

1332 Jefferson Ave., Detroit, U. S. A.

Members of the Association of Licensed Automobile Manufacturers.

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THE GOODRICH TIRE RECORD

IN THE

GREAT ST. LOUIS TOUR.

THE BEST YET.

79 Goodrich Tires in the run, or nearly one-third of all.

21 more Goodrich Tires than any other make.

Over 50 per cent. of the Goodrich Tires started from New York, Boston, Baltimore and Philadelphia.

Nearly 50 per cent. of our nearest competitors' tires started from Chicago only.

Not a new Goodrich Tire that showed a defect or developed a weak spot or necessitated replacement.

Two old cases which had run 12,000 and 15,000 miles respectively, were replaced a short distance out from St. Louis.

Such a record speaks volumes and gives to the

ORIGINAL AMERICAN CLINCHER
The Cleanest Tire Score Ever Achieved in the History of Automobiles.

THE B. F. GOODRICH COMPANY,

AKRON, OHIO.

NEW YORK,, 66-68 Reade St. and 1625 Broadway.
BOSTON, 157 Summer St. CLEVELAND, 420 Superior St.
CHICAGO, 141 Lake St. PHILADELPHIA, 922 Arch St.
BUFFALO, 9 W. Huron St. DENVER, 1444 Curtis St.
DETROIT, 80 E. Congress St. SAN FRANCISCO, 392 Mission St.
LONDON, E. C., 7 Snow Hill.

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THE CADILLAC WINS

races and hill-climbing contests so often, we have come to regard its winning as a matter of fact, and, as "we do not make a racing machine," we rarely advertise its winnings. If any make of machine selling at less than twice its price, and rated at twice its horse-power, succeeds in defeating it, the owner and maker are justly proud of the performance, and as a rule it is well advertised by both. To all of which we offer no objection.

AT DEL MONTE, CALIFORNIA

on August 26th and 27th, there was some racing, in which Mr. Lee and the Cadillac indulged, and while they did not win *all* the races, the following telegram and letter will give you some idea of what they *did do:*

DEL MONTE, August 27th, 1904.

"I entered four new Cadillacs to-day's races. Result: Race for ten horse and under, *Cadillac First and Second.* Race for cars $1,500 and under, carrying 600 pounds, Cadillac Second. Race for 10 to 16 H. P., *Cadillac First and Second,* this in two heats, Cadillac winning each. Two Cadillacs in final ran 5 miles, never 12 feet apart. Race pursuit, for cars $1,000 and under, three Cadillacs going when rest out at 10 miles. Won seven cups."

4:25 A. M. (Signed) CUYLER LEE.

UNDER DATE OF SEPT. 27, 1904

Mr. Lee writes as follows:

SAN FRANCISCO, CAL., Sept. 27th, 1904.

Cadillac Automobile Co.,
1343 Cass Avenue, Detroit, Mich.

GENTLEMEN:—

"We notice in the 'Motor Age' that the Rambler Company advertised the races they won at Del Monte. They refer, in this advertisement, to the second race on the first day for touring cars $1,500 and under, and show in the 'ad' a Cadillac, entered by myself, coming in second. They do not mention anything about the fourth race on the same day for gasoline cars 10 to 16 H. P., in which they entered three double-cylinder 16 H. P. Ramblers against two Cadillacs. In the first heat, two Ramblers and a Cadillac raced, the Cadillac winning. The second heat, one Rambler and a Cadillac raced, the Cadillac winning. The two Cadillacs then raced against each other for first honors."

Yours very truly,
CUYLER LEE.

When all is told, you may be pretty certain that Cadillacs are rarely defeated by cars of equal price or power. To beat a Cadillac is the ambition of most makers.

The CADILLAC AUTOMOBILE CO.

(No. 10) **Members of Association of Licensed Automobile Manufacturers.** **DETROIT, MICH.**

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KNOX WATERLESS COMMERCIAL CARS.

ARRIVE ON TIME.

Their mechanism is scientific and practical in its science. They do what they are intended to do—*deliver the goods and return on time.* Accidents and breakdowns are the exception rather than the rule. A Knox Commercial Car can stand more hard usage than any other car on the market. No water to worry about. Knox cylinders are air-cooled—it's the famous Knox patent system that does it.

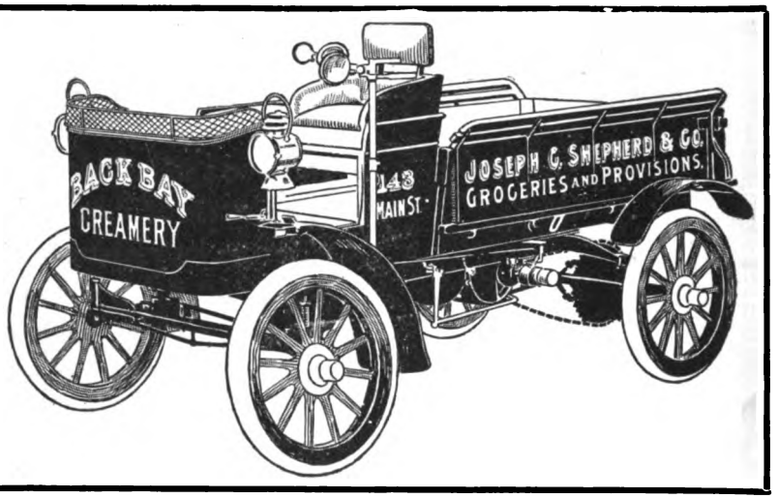
Send for CONCISE CATALOG OF KNOX COMMERCIAL CAR TESTS.

BUY A WATERLESS KNOX.

KNOX AUTOMOBILE CO.,

Members Asso. Lic. Automobile Mfrs. **SPRINGFIELD, MASS.**

SELLING AGENCIES IN ALL PRINCIPAL CITIES.



HEALTH FOR YOU

flows out of the rocks at the various medicinal springs at

FRENCH LICK-WEST BADEN SPRINGS

in the highlands of Southern Indiana. This is the season of the year when a brief visit there will restore the normal balance of your system—renew appetite—put you in condition.

Outdoor and Indoor Recreations in plenty—Golf Playing Now

Superb Hotel Accommodations.

MONON ROUTE
CHICAGO INDIANAPOLIS & LOUISVILLE RAILWAY

Hotel Rates range from $8 to $35 per week, including free use of all the waters.

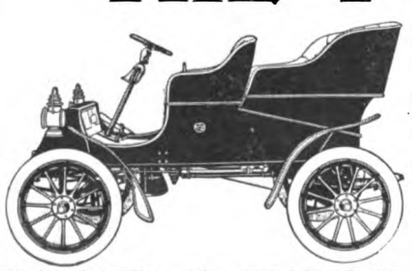
Booklet telling all about the waters and giving list of Hotels and Boarding Houses, with their rates, sent free.

FRANK H. REED, Gen. Pass. Agt., Chicago.

CHAS. H. ROCKWELL, Traffic Man.

A good name is better than Promises.

THE FORD



has a reputation for reliability, second to no motor car in the world. For the professional or the business man who needs a machine for every day use, THE FORD stands prominent as "The Car of Satisfaction." Verified facts are better than "claims."

10 H. P. Double opposed horizontal motor, cylinder head and water jacket cast in one piece (no packed joints.)

Planetary transmission in oiltight dust proof case.

The perfected construction of the FORD is the result of 15 years actual experience in building gasolene automobiles. DON'T EXPERIMENT—JUST BUY A FORD.

Full particulars and catalogue for the asking.

FORD MOTOR CO., Detroit, Mich.



In this, our first "Auto-talk" to the readers of Motor World, we do **not** intend to discuss speed, control or any of the technicalities of automobiling.

What we do want to talk about this time is *value.*

A sensible man doesn't want to pay any more for a thing than it is worth—he wants a thing to be worth all he pays for it.

He doesn't want to pay a big price just because the maker thinks he can get that price, and he doesn't want to be told that a machine is a *good machine,* when it is really only good for the money.

Naturally he asks "Why cannot the automobile business be put upon a solid footing of *cost* and *worth?*"

It was to answer this question that we started a great automobile plant eight years ago.

And to-day we offer to the public the **Autocar**—*an automobile that is built and sold on a commercial basis*—and the only one.

The Autocar is beyond the experimental, feeling-the-way stage.

It costs what it is worth—it's worth what it costs.

Every part from motor to minutest detail of mechanism is built upon lines that have been demonstrated by test and practice to be correct.

The Autocar has all the features of comfort, convenience and safety found in the highest priced car. Every part is instantly accessible. It is built throughout in the best manner of the best materials and finished in the finest possible style.

The Autocar has a speed of from 3 to 35 miles an hour. Extreme ease of control is attained through an unusually simple arrangement of levers.

The price of the Autocar touring car shown above is $1700—the Autocar runabout $900.

In our next month's talk we will give you more details of the Autocar's construction and performance. In the mean time we ask you to send for our booklet, in which are found addresses of our dealers throughout the country. There is one near you.

One thing is certain, you cannot afford to buy an automobile without investigating the Autocar.

THE AUTOCAR COMPANY, - Ardmore, Pa.

Member Association Licensed Automobile Manufacturers.

TRY US FOR

PRESSED STEEL FRAMES.

We are making them from the Highest Grade of Cold Rolled Steel under the most perfect conditions of manufacture.

Latest types of Hydraulic Presses and Rivetters, give us unsurpassed facilities for making pressed steel frames in large quantities. Where accuracy and quality are considered we guarantee satisfaction.

NOW IS THE TIME TO CONSIDER 1905 REQUIREMENTS.

Send us your drawings and get our prices.

CLEVELAND CAR SPECIALTY CO.,

CASE AVENUE and LAKE STREET, CLEVELAND, OHIO.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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Many social leaders in New York and other large cities—people who demand and have the best of everything—are users of **COLUMBIA Electric Broughams, Landaus, Landaulets, Hansoms, Coupes, Victoria Phaetons and Opera Busses.**

These vehicles are built from exclusive designs and are sold for private service only. Let us send you a handsomely printed list ot prominent purchasers and our special Town Carriage Catalogue.

ELECTRIC VEHICLE CO., Hartford, Conn.

NEW YORK, 134-138 West 39th St. CHICAGO, 1413 Michigan Ave. BOSTON, 74 Stanhope St.

Member Association Licensed Automobile Manufacturers.

VEEDER ODOMETERS

are supplied as part of the regular equipment on the

KNOX
STEVENS-DURYEA
PIERCE
OLDSMOBILE
APPERSON BROS
NATIONAL
BAKER
BUFFALO ELECTRIC
GLIDE

"It's Nice to Know How Far you Go."

THE VEEDER MFG. CO., - Hartford, Conn.

Makers of Cyclometers, Odometers, Techometers, Counters and Fine Castings.

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WINTON

POLICY FOR 1905.

Sales Agents from many sections of the automobile world have asked us during the past week what we would have ready for the early 1905 market. The extent and character of these inquiries afford us a great deal of satisfaction, for we realize that much is expected from the house of WINTON, and certain we are that the very highest expectations of our Sales Agents will be gratified.

Our inquirers wish to know whether we will manufacture one model, two models or three models. They ask if we will build double or four cylinder cars, or both. And if we build four cylinder cars exclusively will we have a sufficient number of models, affording the necessary range in price so that Sales Agents will not be compelled to represent several manufacturers in order to have a complete line of gasoline cars.

And they want to know also if we will build vertical or horizontal motors. They ask if it is a fact that Mr. Winton has solved the problem of a practical vertical four cylinder motor, which will at once embody the important advantages of our horizontal construction and eliminate the disadvantages of inaccessibility, improper lubrication and ignition and the great complication of parts, which are the common faults of the vertical motors that have gone upon the market to date.

Some Sale Agents have asked if it is not true that we have developed and will employ a practical and sure ignition system which eliminates batteries and the ever-bothersome multiple spark vibrator coils.

Then again we are asked whether a positive automatic oiling system, which will be equally efficient in all temperatures, and with which we have done some extensive experimenting during the past year, will not be a feature of WINTON 1905 construction.

Of course, there is no secret about our direct drive, side entrance tonneau, improved carburetor, etc.

Without answering each of these queries specifically at this time, because we shall reserve the details of WINTON 1905 features for a separate announcement, we can say without any reservation whatever that our 1905 models will more completely represent the wants of the buying public than any line of automobiles ever before put upon the market. Just watch this space—or, better still, get into communication at once with our Sales Department.

And now permit this line of advice: Avoid stepping on "live wires." Wait until you know what we are going to offer before making definite promises to any manufacturer.

THE WINTON MOTOR CARRIAGE CO.

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

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The Best Automobile Motors

AND

Automobile Charging Machines

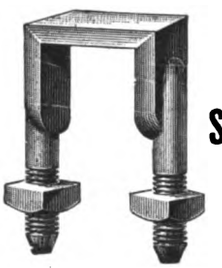
ARE MADE BY

THE ELWELL-PARKER ELECTRIC CO,

CLEVELAND, O.

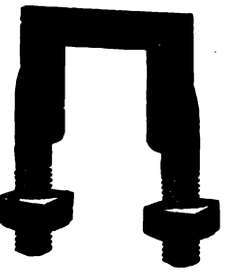
THE M. SEWARD & SON CO.

NEW HAVEN, CONN.



MANUFACTURERS OF

CARRIAGE HARDWARE AND Special Drop Forgings FOR Automobiles AND OTHER WORK.



We are prepared to make estimates from drawings or models and guarantee first-class work.

"I have now driven 3300 miles, and the little troubles that I have had are too small to mention; it is certainly wonderful how she keeps going mile after mile with no trouble whatever. We have taken some very long runs."

(From a driver of a four-cylinder LOCOMOBILE, who is no novice at automobiling.)

NOTE that LOCOMOBILE Cars can be seen and tried at any Locomobile Branch Office. Front Vertical Motors exclusively.

PRICE, $2,100 Up.

The *Locomobile* Company of America,

BRIDGEPORT, CONN.

BRANCHES: New York, Broadway and 76th St.; Philadelphia, 249 North Broad St; Chicago, 1354 Michigan Ave.; Boston, 15 Berkeley St.

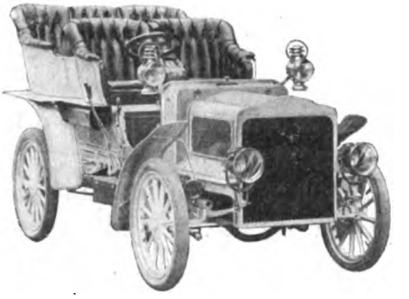
Member Association of Licensed Automobile Manufacturers.

The Incomparable White at St. Louis

(*The World's Fair Automobile Speed Contest.*)

Captured three firsts, one second and one third of a total of five events entered. One of these firsts is the famous Greyhound Stakes, advertised as having been won by one of the high-powered gdsoline machines, which in reality came in second.

"Mr. Jay, in his 10 horsepower WHITE stock car was "called on the track for two ten-mile and one five-mile "events in succession, and the showing he made compet- "ing with cars of two and three times the horse power "of his was wonderful."



WHITE SEWING MACHINE COMPANY, Cleveland, Ohio.

Darracq Motor Cars

SET THE FASHION TO THE WORLD

Speed, Silence, Comfort.

(MICHELIN TIRES USED.)

AMERICAN DARRACQ AUTOMOBILE COMPANY,

Controlled by F. A. LA ROCHE COMPANY,

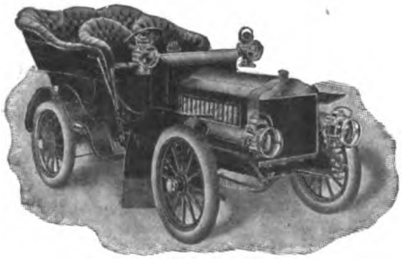
652 Hudson St. and 147 W. 38th St., New York.

PHILADELPHIA, 317-319 North Broad St.

ENTIRE OUTPUT

1904 THOMAS FLYERS SOLD.

NO OAR HAS BETTER REPUTATION.



The 1905 "FLYER" will shortly be announced.

GET IN LINE IF INTERESTED.

RIDE IN A "THOMAS" OR TAKE "THOMAS" DUST.

E. R. THOMAS MOTOR CO., No. 1210 Niagara St., Buffalo, N. Y.

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"THE PREMIER COMET"

At Chicago, October 1st,

WON EVERY EVENT ENTERED,

Including Manufacturers' Diamond Challenge Cup, 5 Miles in 5:15.

For Middleweight Class, Two Miles WORLD'S RECORD in 2:02.

1905 PREMIERS READY FOR IMMEDIATE DELIVERY.

RESPONSIBLE AGENTS WANTED IN UNOCCUPIED TERRITORY.

Better Get in Line Before Our 1905 Output is Sold.

PREMIER MOTOR MFG. CO. - Indianapolis, Ind.

Unique and Unparalleled

Performance of the Pathfinder

ELMORE



The history of automobiling in America records no more sensational performance than that of the Pathfinder Elmore on the recent trip from New York to St. Louis and return. An ordinary stock car was selected to map out the roads in advance of the endurance run. This tremendous trip of more than 5000 miles over villanous roads was made by the Pathfinder Elmore with a repair bill of only 25 cents, and not a single displacement. Did any car in the endurance run—whether it cost $1000 or $10000—equal this astonishing record of the $850 Elmore?

Send for catalogue and the intensely interesting little book "One Long Jump and Two Short Steps."

THE ELMORE MFG. COMPANY,

1104 AMANDA ST., CLYDE, OHIO.

Members of the Association of Licensed Automobile Manufacturers.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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Your
SPECIFICATIONS
for
FORGINGS
should reach us promptly to insure
Seasonable Deliveries.

ARE YOU READY?
WE ARE.

THE BILLINGS & SPENCER CO., Hartford, Conn., U. S. A.
Makers of
Drop Forgings of Every Description.

THE ONLY WAY

to build automobiles that will stand the test is to use sheet metal parts in place of castings.

WE DO HEAVY AND DIFFICULT STAMPING.

The Crosby Co.,

BUFFALO, N. Y.

RIM LIFE
means
TIRE LIFE.

"SWEDOH" Spring Steel Rims

are long-lived.

Their use insures long-life to the tires to which they are fitted.

The composition of "SWEDOH" SPRING STEEL is peculiarly adapted to automobile rim building. There's just the right proportion of toughness to keep the rims round and just enough spring to soften the shocks to which a rim is subjected.

"SWEDOH" SPRING STEEL RIMS are now used by most builders of high-class cars, and are heartily indorsed by all tire manufacturers.

Made by

THE AMERICAN TUBE & STAMPING CO.
Bridgeport, Conn.

We own and operate our steel billet-making and hot and cold rolling mills and stamping works.

FIRE PROOF

Hotel Lenox

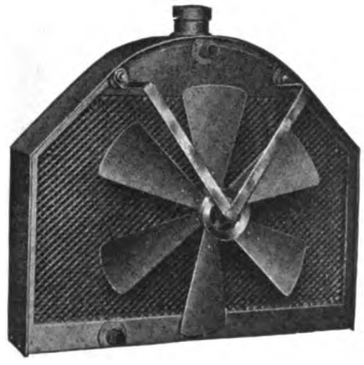
Boylston and Exeter Streets
Back Bay, BOSTON

ONE OF THE FINEST MODERN FIRE PROOF HOTELS IN THE COUNTRY. TWO MINUTES' WALK FROM THE BACK BAY STATIONS, AND ONE BLOCK FROM COPLEY SQUARE

CHARLES A. GLEASON, *Manager*
Send for illustrated booklet

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KEEPING COOL



is the problem of the motor that sets out for a continuous day and night dash from the Great Lakes to the Atlantic. Plowing across the prairies of the West, through the sandy roads along Lake Erie, and up the tortuous climbs over the Catskill Mountains, with throttle wide open and a merciless driver getting every ounce of power out of the motor, the problem is, we repeat, to

KEEP THAT MOTOR COOL!

The COLUMBIA and the WHITLOCK Coolers set up a new mark--Chicago to New York, 1,127 miles; net time 51 hours 5 minutes.

The motor was a 30-35 h.p.; the water consumed in the fifty-one hour grind was TWO QUARTS! These accomplishments are phenomenal when compared with the results gotten from other coolers.

BUT!! The COLUMBIA had cracked this record before; its makers knew the necessity of

RELIABILITY AND A COOL MOTOR

and their choice well fell to

The Whitlock Cooler.

The motor with a poor cooler will not mote. The Standard cooler for high-class cars is indisputably the WHITLOCK.

MADE BY

WHITLOCK COIL PIPE CO., Hartford, Conn.

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MICHELIN, - First
MICHELIN, Second

A Great Double VICTORY for the famous MICHELIN TIRES

The Vanderbilt Cup Race of three hundred miles on Long Island, Oct. 8th, won by

MICHELIN TIRES.

HEATH, Panhard, - 1st,
CLEMENT, Clement-Bayard, 2nd,

Both of these Cars fully equipped with MICHELIN TIRES.

Out of eighteen starters in this great International Race, MICHELIN alone officially finished. It was a battle of tires, and MICHELIN proved beyond question its superiority.

IMMEDIATE DELIVERIES. ALL SIZES.

UNITED STATES AGENCY MICHELIN TIRE COMPANY
140 WEST 29th STREET, NEW YORK.

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ALLEN, HALLE & CO.

69 Wall Street and 89 Beaver Street, New York

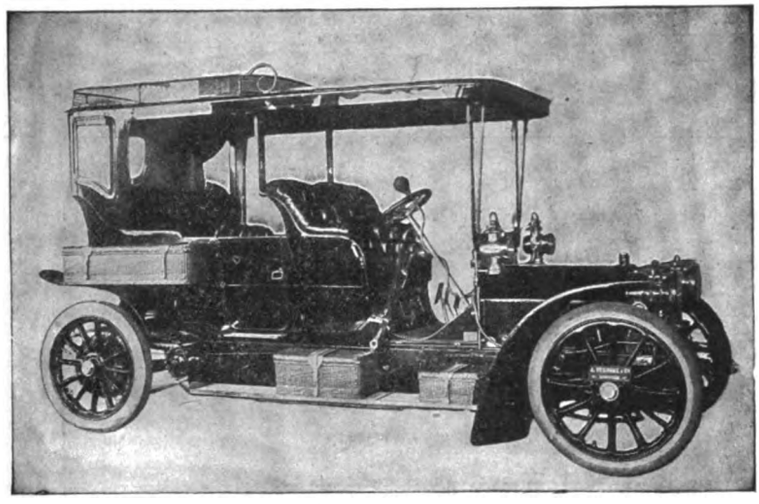
91 Aldergate Street, E. C. London, England

SOLE AMERICAN CONTROL

MERCÉDÈS

THE ARISTOCRATIC MOTOR CAR OF THE WORLD

Sole Representatives of C. L. CHARLEY, Paris



It may not be generally known that all the Mercédès cars which gained the supremacy in the Gordon Bennett and subsequent races are the regular touring cars with racing bodies.

Orders Can Now be Booked for 1905 Models

Every Mercedès car imported must bear license plate, to be secured only through us. Otherwise owners will be promptly prosecuted.

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COMFORT IN TRAVEL

Is found in a High Degree on the Fine, Fast Through Trains

of the

MICHIGAN CENTRAL

THE NIAGARA FALLS ROUTE

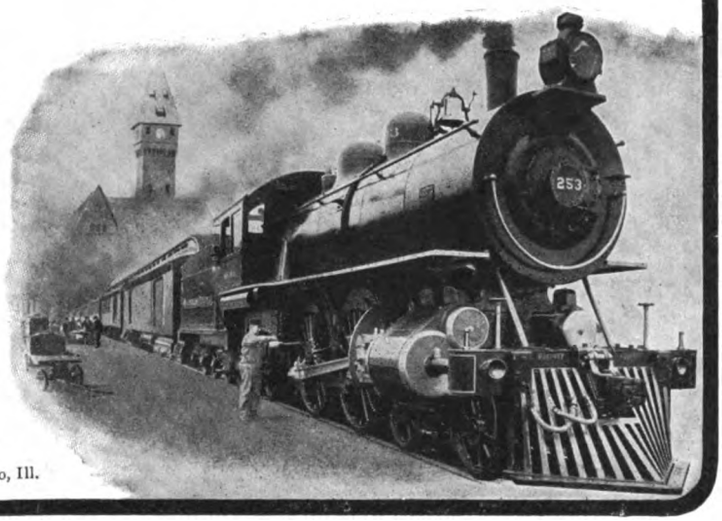
from NEW YORK and BOSTON to DETROIT, MICHIGAN POINTS and CHICAGO,

at which point connection is made with all Western Lines for the West.

For information address local ticket agents or write

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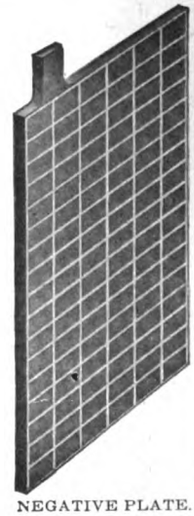


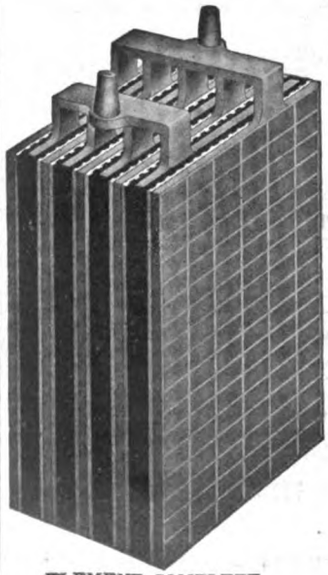
THE WILLARD

LATEST MODEL Light Weight STORAGE BATTERY


SHEATH OVER POSITIVE PLATE.


WOOD SEPERATOR.


NEGATIVE PLATE.


ELEMENT COMPLETE.

MANUFACTURED BY
THE WILLARD STORAGE BATTERY CO. CLEVELAND, OHIO.

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— THAT ETERNAL QUESTION —

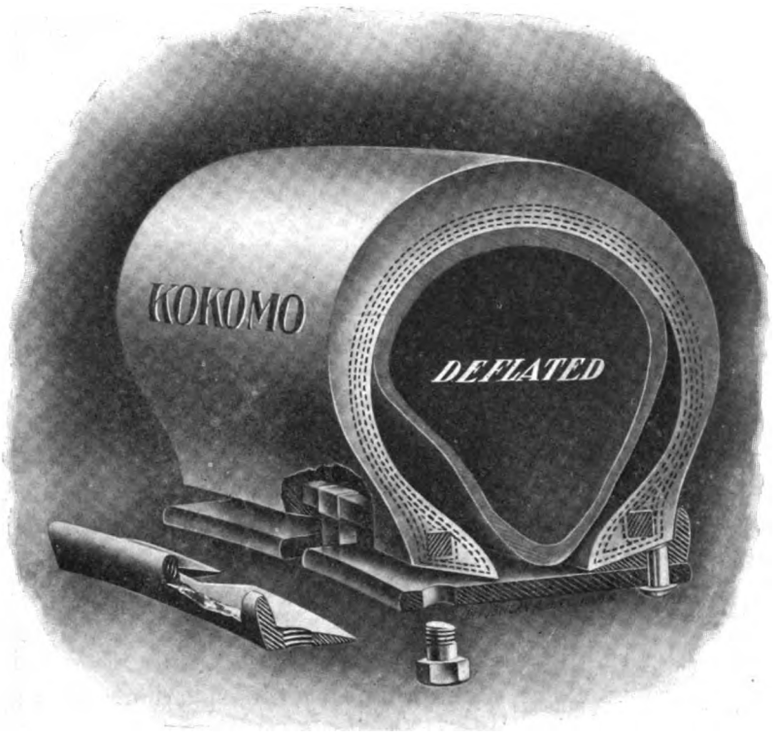
— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the tire itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

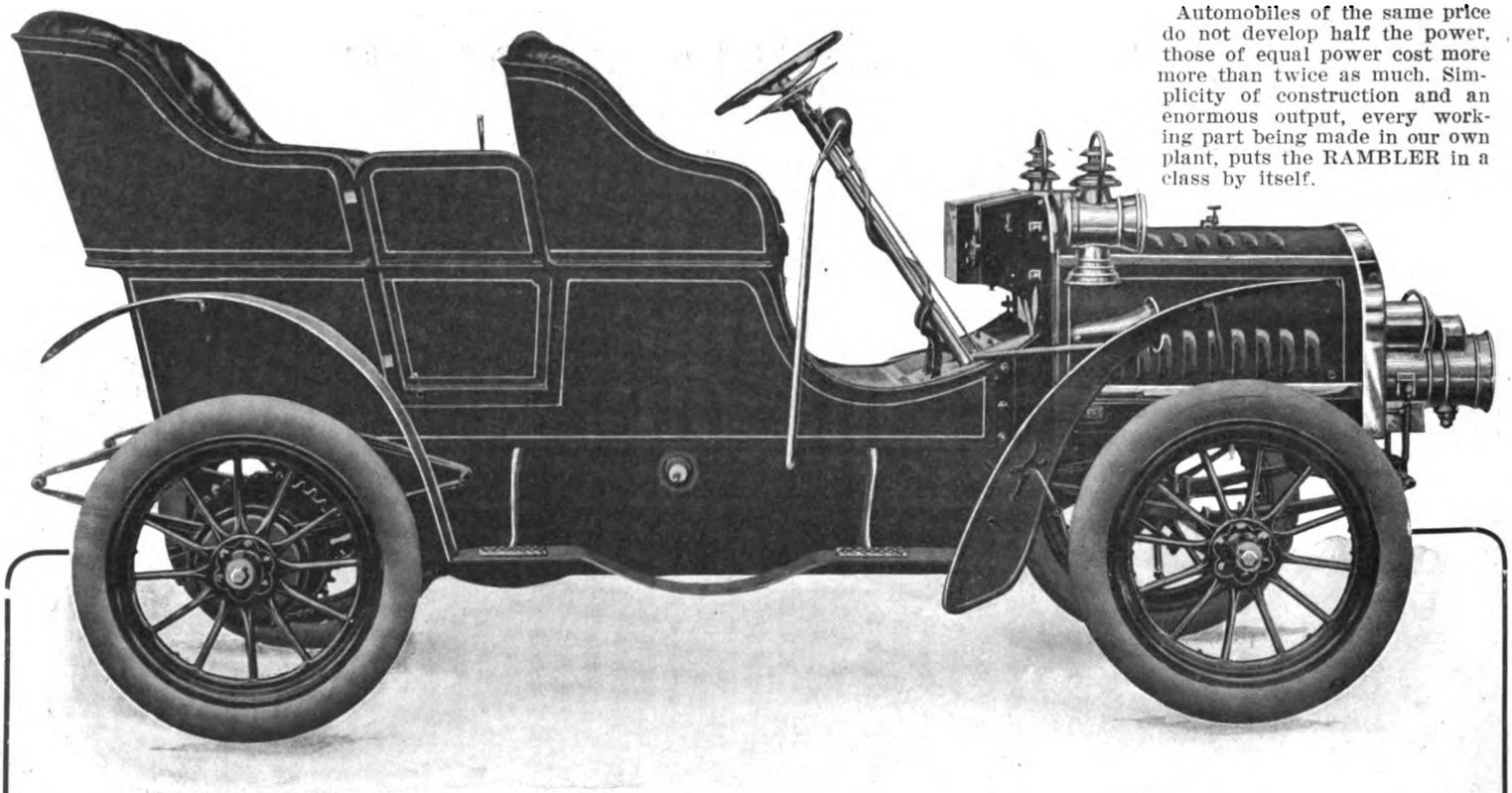
Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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Automobiles of the same price do not develop half the power, those of equal power cost more more than twice as much. Simplicity of construction and an enormous output, every working part being made in our own plant, puts the RAMBLER in a class by itself.

Rambler Surrey Type One, 1905 Model

TWO CYLINDERS, 16 H. P.

$1350. IMMEDIATE DELIVERY.

In RAMBLER SURREY TYPE ONE the speed is regulated by the throttle attached to the steering wheel, requiring only one hand to steer and control. The air-regulating device economizes gasoline The ignition is timed automatically by a governor in exact requirement to the speed of the engine. The brakes stop machine, under full speed, within twice its length.

Some 1905 Features.

Pedal, applying main brake, disconnects engine from running gear. Single carburetter supplies both cylinders. One lever control. No internal and fibre gears. Ninety-inch wheel base with pressed steel frame. Movable steering pillar. Side entrance to body.

Write at once for complete information and illustrated matter of this and the $750, $850, $2000 and $3000 models.

THOMAS B. JEFFERY & COMPANY,

BRANCH HOUSES: BOSTON, 145 Columbus Avenue. CHICAGO, 304-306 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

Main Office and Factory: Kenosha, Wis.

NEW YORK, 38th Street and Broadway.

Representatives in all leading cities throughout the country.

SOME EXCELLENT TERRITORY OPEN.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, October 13, 1904. No. 3

TO TEST LICENSE LAWS

N.A.A.M. Decides to Take Action—Elects Three New Members and Sanctions Two More Shows.

Quite unexpectedly the National Association of Automobile Manufacturers, at the meeting of its executive committee, on Friday last, 7th inst., decided to undertake to prove or disprove the legality of the laws requiring numbers, licenses or registration, or whatever they may be called. Action took the form of requesting an opinion from the association's counsel, with a view of instituting a test case.

According to Manager Miles, "the particular difficulty which brought about this decision is that which makes it necessary to be provided with licenses for a number of states before attempting a tour of any length. The association is now determined to ascertain whether a license is necessary in any State, and, if so, whether a license issued by one State is not, of necessity, to be accepted by the authorities of other States."

At this meeting the representatives of the Reliance Automobile Mfg. Co., of Detroit; the Corbin Motor Vehicle Corporation, of New Britain, Conn., and the Phelps Motor Vehicle Co., of Stoneham, Mass., were admitted to membership. The Daimler Co. was reinstated, and the name of the Berg Co. was changed to the Worthington Automobile Co. The resignations of the Hyatt Roller Bearing Co. and the National Cement and Rubber Co. as associate members were accepted.

S. A. Miles, general manager, was again elected the association's representative on the committee of allotment for the New York Show.

The show committee reported that sanctions had been issued for shows at Philadelphia and Toronto, making the complete list to date as follows:

New York—J. C. Young, manager, Madison Square Garden, January 12 to 21.

Chicago—S. A. Miles, manager, 7 East Forty-second street, February 4 to 11.

Philadelphia—Philadelphia Auto. Trade Association, H. D. LeCato, manager, Girard Building, January 23 to 28.

Detroit—Tri-State Sportsmen's and Automobile Association, Seneca G. Lewis, manager, February 13 to 18.

Toronto—Toronto Automobile Club, W. J. Morgan, United States representative, Press Club, New York, February 27 to March 4.

Boston—Boston Automobile Dealers' Association, Chester I. Campbell, manager, 5 Park Square, March 4 to 18.

Washington—Washington Automobile Dealers' Association, B. C. Washington, Jr., manager, March 27 to April 5.

Gets Money to Further Plans.

In line with the enlarged scope of the plans of the Consolidated Manufacturing Co., of Toledo, Ohio, a mortgage was executed last week for $200,000 in favor of the Ohio Savings Bank and Trust Company. This increased working capital will be used in the extending of the business, which is expected to attain larger proportions the coming season than ever before.

Cryder Quits the Consolidated.

H. C. Cryder has resigned the presidency of the Consolidated Motor Co., of this city, and Lowell N. Palmer has been elected in his stead. The concern is making good progress in the production of its various lines, some of which are almost completed. Hereafter the Moyea touring car will be built with the Consolidated Co.'s friction drive device.

Columbus Settles With Creditors.

The Columbus Motor Vehicle Co., Columbus, Ohio, have settled their financial troubles out of court. The creditors, several of whom filed a petition in bankruptcy, have accepted the company's offer, and it is understood that it will resume business at once.

Two Rambler Surprises in Store.

The Rambler line for 1905 will incorporate two surprises—models at $2,000 and $3,000 respectively. It is understood that they will be closed or semi-closed cars, embodying something unusual in the way of luxurious appointments.

ST. LOUIS AWARDS

Jurors Complete Their Labors and Distribute Honors to the Deserving—Some Big Surprises Included in the List.

St. Louis, Oct. 10.—Although a number, if not all, of the successful exhibitors have been already notified of the findings of the Jury of Automobile Awards, it is probable that they will not be officially promulgated until the end of this week. For some reason the exposition authorities appear to wish the information withheld. It is known, however, that the awards are as follows:

Grand Prizes.

Gasolene.

Haynes-Apperson Co., Haynes cars.

George N. Pierce Co., Pierce Great Arrow car.

Pope Mfg. Co., Pope-Toledo cars.

Steam.

White S. M. Co., White cars.

Electric.

Woods Motor Vehicle Co., Woods cars.

Gold Medals.

Electric Vehicle Co., Knox Automobile Co., Packard Motor Car Co., National Motor Vehicle Co. and the Rainier Co., also, in accessories, Badger Brass Mfg. Co. (Solar lamps), Veeder Mfg. Co. (Veeder odometers) and Shelby Steel Tube Co., and Hendee Mfg. Co. (Indian motorcycles) and Miami Cycle & Mfg. Co. (motor Racycles).

Silver Medals.

Olds Motor Works, Cadillac Automobile Co., T. B. Jeffery & Co., Winton Motor Carriage Co., E. R. Thomas Motor Co., Ford Motor Co., St. Louis Motor Carriage Co., Grout Bros. Co., Smith & Maltby, H. H. Franklin Mfg. Co., and, in accessories, Gray & Davis (lamps).

Bronze Medals.

Royal Motor Car Co., Waltham Mfg. Co. and Duryea Power Co., and, in accessories, the 20th Century lamps and Apple and Motsinger igniters.

In the foreign section, grand prizes were awarded Renault, Panhard, Daimler, De Dietrich and Georges-Richard, and gold medals to Darracq and Benz.

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MECHANICAL MEN MEET

License Association Brings Them Together and First Step is Taken to Band Them.

Because of the lateness of the hour and the necessity of being on the scene of the Vanderbilt Cup race early the following morning, the projected mechanical branch of the Association of Licensed Automobile Manufacturers was not formed at the meeting of that organization on Friday evening last, 7th inst. The first step in that direction was taken, however, by authorizing Colonel Charles Clifton, of the George N. Pierce Co., to appoint a committee of five to bring about the permanent formation of a mechanical branch, as had been proposed. It is expected that a meeting for the purpose will be held about November 1.

This was decided at the dinner held at the Central Park Casino, at which General Manager Day presided.

The forenoon and afternoon were devoted to what may be termed the "comparison run" to Ardsley and Travers Island. It was a well ordered affair, designed not merely to acquaint the mechanical heads one with the other, but to afford them an opportunity of exchanging ideas and comparing notes and cars. To further the plan, each participant was furnished with a card designating the successive cars in which he was to ride, and giving a key to the numbered white ribbon badges worn by each man. In this way when stops were made and "change cars" was the order of the moment, every man was able to immediately identify every other man, and to call him by name. All were given opportunities to ride in each other's cars, of which eighteen were in evidence. Of the number but three were 1905 models—those of the Electric Vehicle Co., the E. R. Thomas Motor Co. and the George N. Pierce Co.

Those who participated were: E. O. Pollard, superintendent, and A. P. Brush, engineer, Cadillac Automobile Co.; Howard Coffin, engineer, Olds Motor Works; T. C. Collings, superintendent, Peerless Motor Car Co.; J. Frank Duryea, engineer, J. Stevens Arms and Tool Co.; Herman G. Farr, secretary and superintendent, and Harry A. Knox, vice-president and general manager, Knox Automobile Co.; D. Ferguson, engineer, and Henry May, vice-president and general manager, George N. Pierce Co.; L. B. Gaylor, general manager, and J. C. Robbins, engineer, Waltham Mfg. Co.; N. T. Harrington, engineer, and Charles B. Wilson, superintendent, Olds Motor Works; Elwood Haynes, vice-president and general manager, and Richard Wiley, superintendent, Haynes-Apperson Co.; J. P. Howe, designer; Karl Almquist, chief draughtsman; H. R. Worthington, secretary, and W. J. P. Moore, vice-president, Worthington Automobile Co.; C. B. King, superintendent, Northern Mfg. Co.; L. H. Kittredge, treasurer and general manager, Peerless Motor Car Co.; Hiram P. Maxim, chief engineer, and George W. Wesley, superintendent, Electric Vehicle Co.; Harry G. McComb, mechanical engineer, and John C. Spiers, general manager, the Autocar Co.; F. P. Nehrbas, assistant superintendent, and E. R. Thomas, president, E. R. Thomas Motor Co.; W. M. Remington, assistant engineer, J. Stevens Arms and Tool Co.; Eugene F. Russell, superintendent, Locomobile Company of America; B. W. Snow, superintendent, and John Wilkinson, engineer, H. H. Franklin Mfg. Co.; Henry Souther, mechanical engineer, Locomobile Company of America; J. G. Utz, engineer, and William Van Wagoner, general superintendent, Kirk Mfg. Co.; S. D. Waldron, sales manager, Packard Motor Car Co.; R. M. Beck, chief engineer, and Harold Pope, engineer, Pope Mfg. Co.; T. W. Goodridge, manager, Studebaker Automobile Co., and George H. Day, general manager, A. L. A. M. and K. F. Cuntz, patent attorney, A. L. A. M.

All of the cars employed were distinctly on their "good behavior." On their arrival at the Casino in the evening, it was found that five punctures constituted the sum total of the day's troubles and delays.

Packard Now on Broadway.

The New York branch of the Packard Motor Car Co. has been removed to No. 1,542 Broadway, near Forty-sixth street, and fronting the asphalted expanse of Long Acre Square. It will afford more room and conveniences than the old place on Fifty-ninth street.

Koehler Adds Another Store.

Including the main one at No. 845 Broad street, the H. J. Koehler Sporting Goods Co., Newark, N. J., now maintains four stores, the most recent establishment having been opened at Nos. 141 and 143 Halsey street, in that city. The third store is in East Orange, and the fourth in Montclair.

Krotz Has New Cushion Tire.

The Krotz Mfg. Co., Springfield, Ohio, the head of which is also connected with the Kelly-Springfield Tire Co., will build a limited number of electric cars for next season's trade. Incidentally, Mr. Krotz has recently perfected a cushion tire which probably will be heard from later.

Body Builders Increase Capital.

An increase of capital from $30,000 to $50,000 has been made by the Pontiac Body Co., of Pontiac, Mich., which will make additions to its plant. Hereafter automobile bodies will be manufactured exclusively.

Clark Buys Out Beach.

John D. Clark has purchased the interest of E. A. Beach in the firm of Clark & Beach, 1404 Meridian street, Anderson, Ind., and will continue the business in his own name. A specialty of automobile repairing is made.

ELECTED ELEVEN NEW MEMBERS

Accessory Association Expanding at a Great Rate—Its Show Committee is Named.

What one of those who attended described as "the best meeting we have ever held" was that of the executive committee of The Motor and Accessory Manufacturers in New York on Thursday last, 6th inst. Practically every member of the committee was present, and all seemed animated by the "do something" spirit that has possessed the organization since it was formed.

Eleven new members were elected, but that the Manufacturers are not falling over themselves in the desire to boost a lengthy roll was indicated by the holding over for further investigation of several other applications. Similarly, the expulsion or dropping from the rolls of two members for failure to pay their dues showed that no "dead wood" is being carried.

At the meeting the appointment of the show committee was announced, as follows: Chairman, D. J. Post, of the Veeder Manufacturing Co., Hartford Conn.; H. O. Smith, of the G & J Tire Company, Indianapolis; F. E. Castle, of Gray & Davis, Amesbury, Mass.; H. W. Chapin, of the Brown-Lipe Gear Company, and H. T. Dunn, of the Fisk Rubber Co.

The prospectus and plans of both shows will be forwarded to the members of the organization, and the committee will allot the 10,000 feet of space reserved at the New York show for the Motor and Accessory Manufacturers. Application for space for the New York show will close on October 28, at noon, and for Chicago on November 1.

The new members elected were as follows: Federal Manufacturing Co., Elyria, Ohio; Parish & Bingham Co., Cleveland; Dow Portable Electric Co., Braintree, Mass.; Gray Pump & Register Co., Rochester; Auto Coil Company, Jersey City, N. J.; Warner Instrument Co., Beloit, Wis.; Continental Rubber Works, Erie, Pa.; F. E. Wadsworth, Detroit, Mich.; Manufacturers' Foundry Co., Waterbury, Conn.; Carlisle-Johnson Machinery Co., Hartford, Conn., and the Webb Company, New York City.

On Saturday the officers occupied a box in the grandstand at the Vanderbilt Cup race.

Century Creditors Will Meet Once More.

A meeting of the creditors of the Century Motor Vehicle Co., of Syracuse, N. Y., will be held in that city on October 17, at which time the concern is expected to be finally wound up. The meeting is called for the purpose of passing upon the final report and account of the trustee, the declaration of a final dividend, making such allowances for expenses and attorneys' fees as to the court may seem proper, and the discharge of the trustees from the performance of all further duties.

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Scenes During the Run of the A. L. A. M.



Photographed exclusively for The Motor World.

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NOT LIKE OTHER TIRES

Notable Production of a Notable Concern—Many Ingenious Ideas Brought Into Use.

Quite the most notable development in tires that has made its appearance in some time was launched last week by the Kokomo Rubber Co., of Kokomo, Ind., who in themselves constitute a notable addition to the automobile industry. For many years they have stood high as makers of bicycle and carriage tires, their record being one of uninterrupted prosperity and growth, and their reputation that of sound and conscientious manufacturers. For at least three years they have been wrestling with the automobile tire problem, and it is in line with their record and repute that they did not go off half cocked and announced their tire only when thorough test had proved it right and worthy of their name.



Although among the pioneer makers of single-tube bicycle tires, they early came to the conclusion, which all tire makers and users of these tires have since come to, that the problem was not solved, and that the single tube tire would not prove satisfactory. They say that they have watched and experimented with the clincher, and that, while that type of tire seems to be the most feasible tire in general use, they are just as fully convinced that the clincher will have to give way to something simpler and more practical in the way of a mechanically fastened tire.

With this in mind, they have long been experimenting, and for the last year have been testing the mechanically fastened tire they now offer to the public, and which is well shown by the accompanying illustrations. It is a tire that can be put on or taken off the rim in the simplest and quickest possible manner, and with the use of but one tool, a small wrench.

As the cuts make plain, the tire is easily slipped on to a plain flat metal rim or band, and is held securely not merely by the retaining flange but also by metal bands which are imbedded in the lips, or lower parts of the tire; these metal bands have lugs welded to them, which extend down through slots in the plain metal rim or band, and these lugs prevent the creeping so fatal to all tires.



In the Kokomo the inner tube is first put into the casing, inflated and adjusted to its proper place, and does not, like other makes, have to be tucked into the tire deflated, after the casing has first been put on the rim and then inflated, which causes it to be stretched in some places and crimped in others, which is dangerous to the tube, and which is a great drawback. The multiplicity of lugs projecting through the rim and tire casing, and which frequently endanger the inner tube, is also avoided by the Kokomo form of construction, which is such that "creeping" is absolutely impossible; it permits the use of a rubber valve stem and obviates the metal valve, which in many tires is depended on to check "creeping," and which is often torn from the tube by the great strain to which it is subjected.

The substantial dimensions of the "lips" and side walls of the casing, and the great sectional diameter of the tire are other characteristics to which the Kokomo people point with pride. They claim, indeed, that their method of fastening gives more cushion or air space than any tire ever devised, the resulting sectional diameter being such that it is possible to use a smaller Kokomo tire and obtain the same results afforded by other tires of larger diameter—an item that is of considerable present concern to automobile makers as contributing to the lessening of costs.

Duerr to Go It Alone.

C. A. Duerr, of the Duerr-Ward Co., New York agents for the Royal car, has purchased the interests of his partner and will continue the business at the present address, Fifty-eighth street and Broadway. The name of the concern will be changed, but the new style has not yet been settled.

M. Eugene Blin, of the French automobile manufacturing firm of Malicet & Blin, Aubervilliers, is now in this country. He will place contracts here for machine tools which will represent an expenditure of some $60,000. At the present time he is in St. Louis.

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LOZIER CARS ALMOST READY

Big Marine Motor Concern, After Months of Experiment, Enters Sister Field.

It is no secret that the big Lozier Motor Co., of Plattsburgh, N. Y., have been at work on a motor car. More than a year ago the Motor World exclusively announced the fact and predicted that when it finally was placed on the market it would be an automobile worth seeing.

The prediction then made seems in a fair way to be borne out, for after an expenditure of over $30,000 and twenty-one months' effort the company are at last satisfied that they have developed a car that has no superior, either at home or abroad.

Coming from other sources such a statement might well be received with smiles, but with the past record, experience and immense resources of the Lozier people,and last, but by no means least, the fact that the car is the creation of George A. Burwell, designer of the well known Lozier marine motor, and the man who made the Cleveland bicycle, places the matter in a far different light. Then, too, as an indication of the quality to be expected, comes the announcement that despite the facilities of the big plant, but twenty-five machines will be turned out for the 1905 market, and though the list price has not been definitely decided upon, it is known that it will be not less than $5,000.

While it is yet a trifle too early to present detailed specifications of the car it is known that the motor is, of course, a four-cylinder vertical 4½ by 5½, and yielding 30 H. P. at 1000 R. P. M. and 37 H. P. at 1240 R. P. M.

Mechanically operated intake and exhaust valves, double chain drive, slide gear transmission, 36-inch wheels, an improved system of lubrication and the best and most advanced mechanical practices are everywhere incorporated in the constructional features. The entrance is by side door and the total weight of the vehicle is 2250 pounds.

Williams's Lines for 1905.

After a general tour of the West, "seeking what he might find," Frank Blaney, representing P. A. Williams, jr., the Ford man in Boston, has renewed the Ford contract for another year. He has also taken on the Marion car, made by the Marion Motor Car Co., of Indianapolis—a Western production which recently has been singularly successful in obtaining promising Eastern connections.

Searchlight at Popular Price.

The Columbus (Ohio) Brass Co. is adding a mirror-back searchlight to its line; it is small, neat and compact, and the price of it is well within what may be termed the popular figure.

Artz's Ingenious Attachable Seat.

About the neatest thing in folding seats that has yet made its appearance is that shown by the accompanying illustrations, and which is being made ready for the market by the patentee, J. D. Artz, of Dayton, Ohio. The picture shows it attached to a Ford car, but it may be also fitted to the Oldsmobile, the Cadillac, the Franklin, or, in fact, any car in which the rear portion is not otherwise occupied. The seat is of full depth and height from the floor of the car, and is full upholstered on both back and







arms; it is wide enough to accommodate two adults and a child. It is fastened rigidly to the body and cannot slip or collapse when not in use. It can be detached in two seconds, and when folded presents a very neat appearance; it may then also be used to store cushions and robes and thus protect them from dust and the weather. When desired a side door may be fitted. The seat is covered by patent No. 769,455, issued to Mr. Artz on April 15 of this year.

Gets More Room to Make Jacks.

That nothing does succeed like success is again illustrated by the Springfield automobile jack made by the Sawver Co., Springfield, Ohio. It is quite one of the neatest and most serviceable yet devised, and the fact was so generally recognized that they have removed to a larger and much better equipped plant.

IMPORTS SHOW BIG INCREASE

Value of Foreign Cars Brought to This Country Almost Doubled in Nine Months.

Figures given out last week by Appraiser Whitehead of the Port of New York show that the government's revenue from automobile imports during the first nine months of 1904 has almost doubled. Duties derived by the government from this source from January 1 to October 1 of the present year amounted to about $720,000. This is about twice as much as was received during the same period last year.

The number of automobiles entered at this port during the first nine months of this year was 427. These machines did not include any entered in bond or for special purposes, but only those on which duty was collectable. The total valuation of the automobiles was $1,600,000, and the rate of duty was 45 per cent ad valorem.

It will be seen that the average value of the 427 cars brought into this country was $3,749. With the 45 per cent duty, freight charges, etc., added, this means that the cars stood the importers about $7,500 apiece.

The Week's Incorporations.

Elmira, N. Y.—Chemung Automobile Co., under New York laws, with $5,000 capital; to deal in automobiles.

Wilmington, Del.—Delaware Auto Storage & Repair Co., under Delaware laws, with $25,000 capital, to buy, sell, repair and deal in automobiles and motorcycles.

Pittsburg, Pa.—Hiland Automobile Co., under Pennsylvania laws, with $10,000 capital. Directors—John A. Hawkins, George A. Urling and Frank W. Anderson, Pittsburg.

Brooklyn, N. Y.—Automobile Supply Mfg. Co., under New York laws, with $15,000 capital. Directors—Salvatore Salvine, New York; Errico Pascucci and Louis Rubes, Brooklyn.

Bellefontaine, Ohio.—The Zent Automobile Mfg. Co., under Ohio laws, with $25,000 capital. Incorporators: S. W. Zent, C. E. Yoder, Joseph J. Hantgen, W. W. Osborn, John P. Aikin, Nevin W. Smith and W. R. Cordray.

Mishawaka, Ind.—Simplex Motor Car Co., under Indiana laws, with $100,000 capital, to manufacture automobiles. Officers: D. A. Shaw, president; E. J. Gulick, secretary and general manager; J. W. Fuller, treasurer; R. E. Kamm, vice-president.

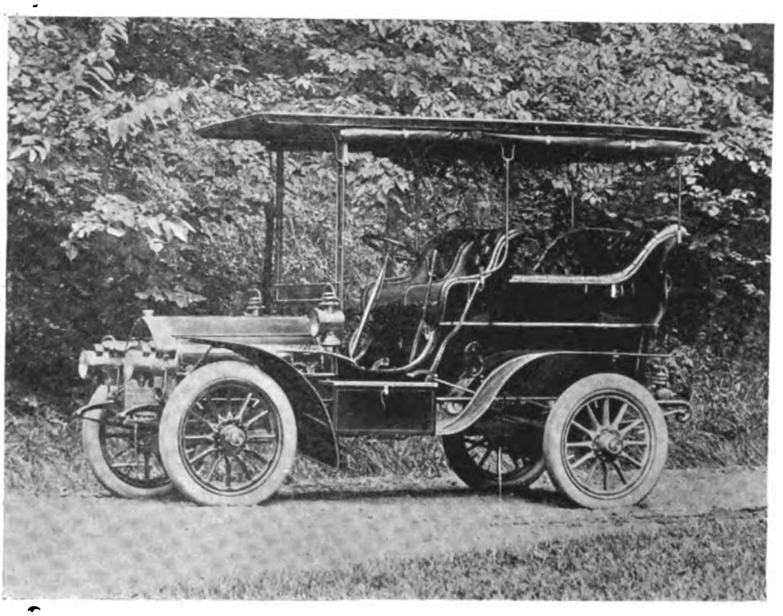
Pittsfield, Mass.—The Berkshire Automobile Co., under Massachusetts laws, with $15,000 capital, to manufacture automobiles. Officers: President, Dr. W. J. Mercer, Frank V. Wyland, vice-president; F. A. Cooley, clerk and treasurer, and Clarence P. Hollister, superintendent. Mr. Cooley will also be the general manager.

Olds May Open in New York.

It is within the realm of probability that the Olds Motor Works will establish a branch in New York City. The matter is being seriously considered, and a decision will be reached before snowfly.

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HAYNES 3 SPEED 1 LEVER TONNEAU.



EFFICIENCY

in its highest degree can be obtained only through the employment of devices which enable the automobilist to take advantage of existing conditions.

The HAYNES 3 SPEED 1 LEVER CONTROL Meets Every Road Condition.

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2d. Gear for hills, sand and bad roads.
3d. Gear for good roads and moderate grades.

RESULT: Never less than 80 per cent. EFFICIENCY of motor. All obtained by 1 LEVER.

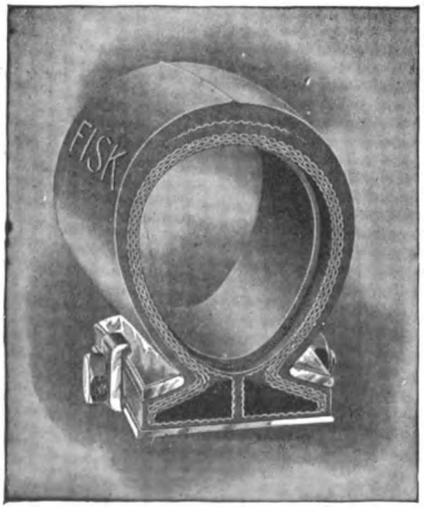
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FISK RUBBER COMPANY,

CHICOPEE FALLS, MASS.

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THE MOTOR WORLD

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☞ Those who are interested in motor vehicles will find the facilities and information of our office always at their command.

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NEW YORK, OCTOBER 13, 1904.

The Yelps of the "Yellows."

In many respects, the result of the Vanderbilt cup race was the bitterest pill the "yellow" press of New York has had to swallow in quite some time. For weeks they had screeched "Outrage," had talked in heroic headlines of "The Race with Death," and screamed "Stop It!" Their sketch artists worked overtime to produce lurid pictures of "red devils" scattering death and destruction on all sides, and the net result was the opposition of a corporal's guard of farmers that faded away the moment it came in contact with cool reason, and an injunction that dissolved the instant it met the dispassionate eye of the court.

The "yellows," and a few not so yellow, have not yet ceased their snarling, but men whose minds are not inflamed by prejudice or passion, can afford now to view the situation with equanimity. There was no carnival either of death or destruction. Of the thousands who viewed the contest, and who roamed over the course at will, not one sustained so much as the scratch of a little finger. Not one horse is known to have so much as pricked up its ears; not a dog or a hen but that remains safe and sound. In the one accident that occurred, the contestants only suffered, and never was there a form of sport in wihch contesants have not occasionally suffered. There is an element of danger in all forms of competition. It cannot be eradicated, and those who enter into such rivalries know it, and manlike, take the small risks that are involved. The ordinary walks—and rides—of life are fuller of dangers and daily claim very many more victims.

The race for the Vanderbilt trophy served to prove that in the hands of experts the motor car, at even the highest speed, is as safe, if not safer, than the street car or railway train. It brought out conspicuously the superb manageability of the car not less than the superb skill, courage and endurance of the men. It demonstrated that when properly warned, and with eyes fully opened, the public knows how to "lookout" and take care of itself.

We do not mean to imply that indiscriminate races on the public road are to be encouraged. Such a state of affairs would be regrettable, but we do not think it is much to be feared. But there is room for one or more properly organized and safeguarded contests, such as the Vanderbilt race, and the men who maintain that they are of no value overlook the well known and undoubted fact that competition or racing of whatever sort has not failed to distinctly improve the breed or kind or species of the animal, fowl or article engaged in it. Horse racing has given the world better horses. Bicycle racing has given the world better bicycles. Automobile racing has given at least the older half of the world better automobiles. And as for speed—all the world and his wife loves it, "yellow" editors and hypocritical preachers and lawmakers not excepted. As one of the soberer public prints put it when the hue and cry against the race was at its height, "although the farmer may be fearful, and his temper may be inflamed, human nature is human nature, and his desire to see the 'gol durn things go' will be strong enough to line the fences of the farms along the route." If the Long Island farmer was numerously or rabidly opposed to the contest, it required the "search" of a yellow journal to discover it on Saturday last. There was no evidence of it to be found by the normal person.

To our mind, however, and as we have time and again suggested, racing on either road or track can be best made serve the interests of automobiling by limiting the power of the cars that may be used. Without a limit, the competition must eventually dwindle to a comparatively few "special" racing machines of abnormal power that are of no practical use and point to no practical or useful ends. They will have all races won before they are started, and there will be no inducement for the average man, however he may be fired, to engage in the sport.

The Long Delayed Fight.

From many standpoints, the decision of the National Association of Automobile Manufacturers to test the legality of the so-called registration or license laws, is quite the happiest and most important news that has emanated from any organization for some little time.

We take it that the test case will be undertaken with a view of carrying it to the highest court in the land. Short of this any result that may be achieved will be of merely local or state effect. If a New York court, for instance, should decide the tagging and numbering law to be illegal, it is certain that the precious States of Pennsylvania and Massachusetts, which "pile on the agony" in damnably un-American fashion, will not give heed to the precedent established. They would continue to impose and collect what is little short of "blood money"; it literally is the price of freedom.

The news, as announced by the manager of the N. A. A. M., would make it appear that the organization is chiefly concerned with, and will institute action in one of those States which refuses to recognize the licenses of other States, manifestly either New Jersey or Maryland. If these appearances are correct, and this is the chief point which it is hoped to have decided, the movement will not be of proper direction. It should not stop short of deciding for all time and for all places whether or no a State or a community of any sort is authorized to impose special burdens and a special tax, under whatever terms, on the private carriage of any citizen that are not imposed on the private carriages of whatever sort of all citizens. That is the real issue at stake, and no other. It is not merely that one State shall be compelled to recognize the licenses of other States.

The numbered tag is the root of all laws requiring registration and licenses. The predominant legislative idea is that the display

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of a number is in the light of "safeguarding the public." If it served this purpose, small objection could ensue, provided that all vehicles were subjected to the same provision. And if the public weal is really served by the display of numbers the one sane and logical law would be that which required all vehicles, regardless of motive power, to display them. The person who is killed or injured has small choice regarding the instrument of his death or injury. It is quite as painful, possibly it is even more painful, to suffer accident or death from a horse drawn vehicle than one propelled by a motor. If the number serves police purposes and contributes to the apprehension of offenders, it appears wise and judicial to provide for the apprehension of all offenders or unfortunates. One is not more culpable than an other, and the law that says so is a lie. The laws that brand the automobilist with a number, and require him to pay for the branding, are of the sort. They prejudge him and compel him to travel, not as an honored citizen, but bearing the mark of a probable malefactor. He is singled out from his fellow man. If this does not constitute class legislation our idea of it is sadly awry. These laws are founded on prejudice or newspaper clamor, or both, and incorporate the spirit that it is better that a hundred innocent men shall suffer than that a guilty one shall escape.

If the number checked speed and assisted the police in the enforcement of the law there might be at least a shred of excuse for it. But, as when an offender is apprehended the number of his license manifestly does not slacken his speed or contribute to his arrest, it is without purpose. And as in the event of escape, the courts have held that identification by number is not sufficient or convincing, to the lay mind it would seem that the law or system falls flat between the two fences, as we remarked in dealing with the subject two weeks since.

The fallacy of such laws, or the enforcement of such laws, is well illustrated by seven cases that were recently decided by the judicial Massachusetts Highway Commission. Of seven motorists arrested for violating the speed provisions of the repulsive law that obtains in that State, three proved that their cars were not even in the locality in which their numbers were "taken" by constables bent on enforcing the laws—against motorists only.

When this proportion of errors obtains, and this proportion of innocent men can be inconvenienced and forced to prove themselves not guilty, it is high time the N. A. A. M., or some other organization which believes in equal and exact justice, should come to the rescue.

The whole numbering system is worse than a farce. It should be attacked, not at one point but at all points, or it should not be attacked at all.

Repairs and Repairers.

So new a business as the making and maintenance of automobiles cannot but have many annoying and disagreeable features. Naturally enough, those connected with the manufacturing end of the business are grappled with and overcome the sooner. Those connected with the maintenance of cars are of less importance, but they are not the less aggravating on that account. Nor is the owner of a car any less impotent in the case of incompetent repairing.

There are many conscientious repairers; there are also a number of skilled ones. Yet neither conscientiousness nor skill avail to put an obdurate automobile to rights when it has made up its mind to go wrong. The most skilful mechanic, one, say, who has worked for years in high class machine shops, would be at first an utter and dismal failure if put to work in an automobile repair shop and set to discover the cause of some defect in the working of the car. Frequently a man without a practical training in the machinist's trade, but with some mechanical aptitude and a knowledge of automobiles, would do much better. He would have the experience which the skilled mechanic lacked, and he would sooner or later put his finger on the seat of trouble. In other words, it is experience that counts for most, and all who would do well in the repairing business will acquire it; the sooner the better.

It is not altogether surprising, therefore, that we hear so many complaints of bad work. Repairing as a business holds out no especial attraction for the good machinist, and it is seldom that he will leave the work at which he is a past master and enter an entirely new field. But as places must be filled, the berths come into possession of men of a strata lower than that of the skilled men. The strata is composed of handy men, of ambitious men, who see in the automobile industry a field for their talents, and of rolling stones who gather no moss—not always because they are ever on the move, however.

The presence of the latter class in repair shops is productive of a great deal of the prevailing dissatisfaction. They make mistakes and they do poor and slipshod work. Thoroughness is not one of their cardinal doctrines. They sometimes effect a repair without removing the cause, and in a short time there is a recurrence of the trouble and the work has to be done over again. The owner of the car is annoyed, and believes that the workman is incompetent, and he goes away with a very poor opinion of the standard of efficiency maintained in the shop. This may well lead to a withdrawal of patronage, and ultimately to a sweeping condemnation of all repair shops.

Sometimes this is merited, sometimes not. The owner or user of the car should bear in mind, first, that the automobile is new, comparatively, and therefore more difficult to understand than it will be a few years later; second, that all intricate mechanisms are liable to develop puzzling diseases and to give trouble to even the most expert workmen.

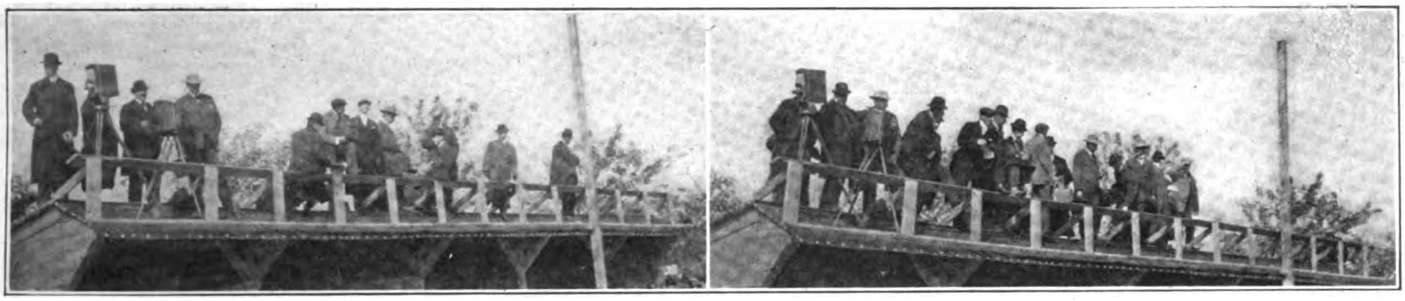
The quick witted workman, who locates the seat of the trouble and puts it to rights in five minutes, performs wonders; and his employer would be dull witted to charge only for five minutes' work. Similarly a baffling "panne" that defies detection for hours, but is finally detected and made right with a turn of a screwdriver, is worth all the time spent on it. But the customer does not always view it in this light, and fumes at what he terms a gross overcharge.

In the automobile repair business, as in nearly all others, it is the "know how" that tells in the long run. It is to the employer's interest to have only good men in his shop, and he must eventually either train or educate the raw material he possesses or make it worth while for more expert mechanics to enter his employ. Then, and then only, will the loud and insistent complaints we now hear on every side cease to be made.

The press agent of the importers' show has "discovered" that the resolution of the N. A. A. M. dealing with outlaw shows was passed specially to injure the exhibition which he is being paid to promote. As a result, he adds that to "get even" it may be necessary for the importers to open their doors to American manufacturers.

The importers should liberally salt their hired romancer before he makes them the laughing stock of the trade. Every one else is well aware that the N. A. A. M. resolution was formulated before the importers' show was conceived, and was designed to prevent an epidemic of local shows promoted by press agents and grafters.

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The Story of How George Heath, an American, won the Vanderbilt Cup for France.



THE MAN WITH THE MEGAPHONE.

"Five killed; seven injured." This was the "score sheet," or "extra," issued and actually sold on the course during the contest by one of the "yellows" that had worked itself into a saffron frenzy and dealt in "Race with Death" scare heads previous to the race for the Vanderbilt Cup.

The "news" flabbergasted even those familiar with the workings of yellow imaginations. It seemed incomprehensible. But after the race had been run a basis for the "news" was discovered. The holes of the tripelike cooler of the winner's car were found to be filled with dozens of dead bodies, many of them held tightly to the metal breastplate by their own congealed gore, others crushed beyond hope of recognition. It was a sight to move a jellow journal to red head lines.

The slaughter of the innocents—of the poor, inoffensive, inoffending Long Island insects—was awful. They evidently had dared what the shrieking yellows themselves had failed to do—to stop the race, and, alas! they had been ruthlessly hurled into the buggish eternity without time even to hum a farewell prayer. It is assumed that a yellow reporter had found somewhere on the course the corpses of five dear little bugs and the still kicking bodies of seven injured ones, and "dreamed" one of those "dreams" of which yellow "extras" are so often made.

He is a very ignorant or uninformed or disinterested person who is not aware that George Heath, an American by birth, a Parisian by virtue of residence, and an Englishman in manner and appearance, was the bug-slaughtering individual who won the inaugural race for the W. K. Vanderbilt, Jr., Cup on Saturday last, October 8, and that he occupied 5 hrs., 26 mins. and 45 secs. in covering the 284.40 miles of Long Island roads.

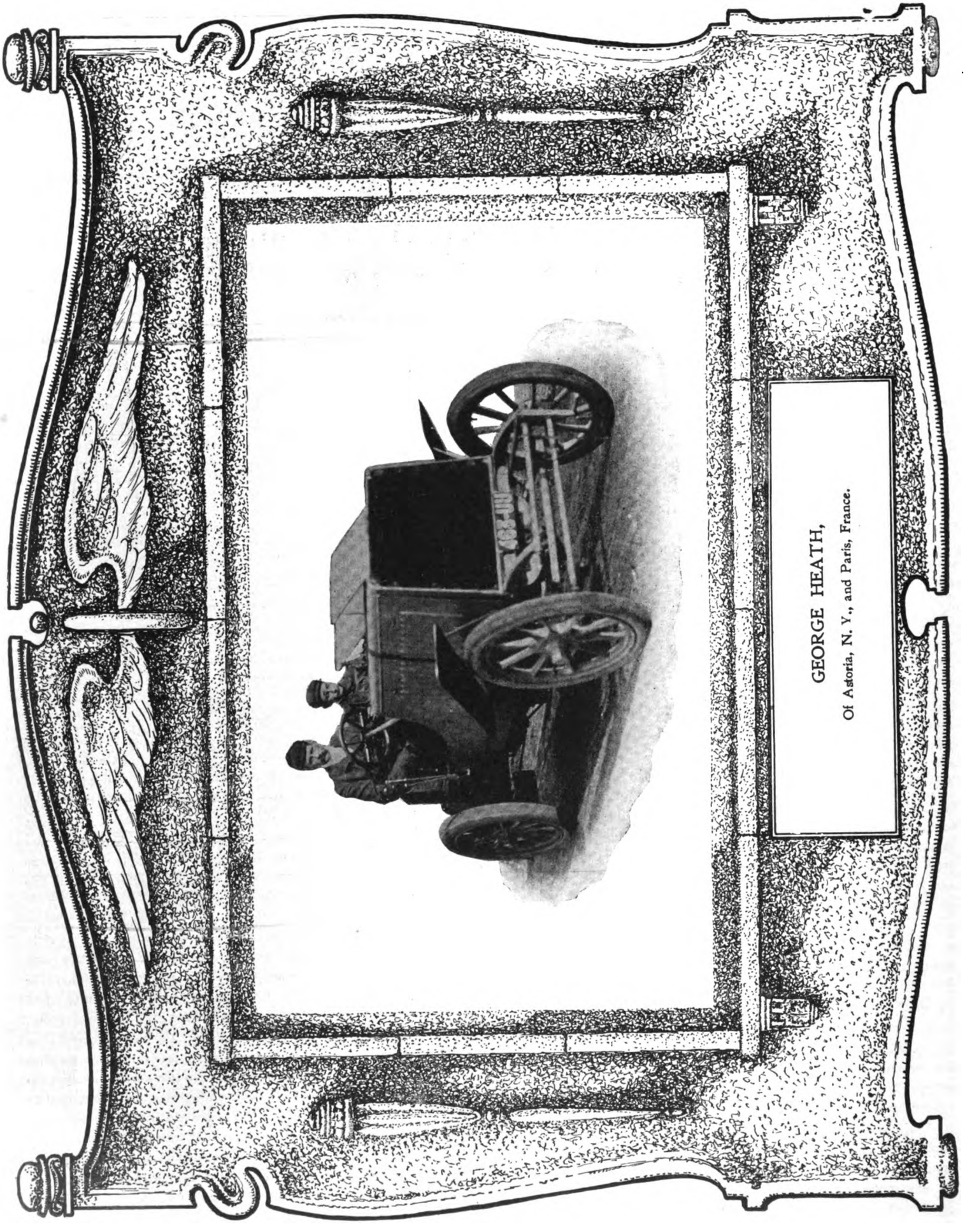
Similarly, the world of intelligence must know as well that Albert Clement, of France, a Frenchman, finished second, and promptly lodged a protest, which was almost as promptly disallowed.

Only these two finished—no more. That an American in an American car did not finish third was due to no fault of his own or of his car, but to the antics of his countrymen, and, in great part, automobilists. Like a lot of thoughtless children they swarmed all over the road, and made travel so dangerous that to protect them from their own folly the officials of the race ordered it stopped. The order halted the American, Herbert H. Lyttle. When his not then esteemed fellow citizens had scattered to the four winds and made progress safe, Lyttle, for personal gratification, completed the final round of the course, and though he was neither officially checked nor officially timed, and does not so figure in the official table, he is still able to place his hand on his chest and exclaim: "I finished, any how!" The gratification was worth while, for in a 24 horsepower stock car Lyttle had given a wonderfully steady and consistent performance throughout.

The race was marred by one accident. If it is possible to extract happiness from such a lamentable occurrence, it lies in the fact that the victims were not spectators, but competitors in the race itself. Chauffeur Carl Menzel is dead, and his wealthy employer, George Arents, who drove the ill-fated car, is, after several days of unconsciousness, slowly returning to health. The best evidence makes it appear that they suffered partly because of their own excitement and zealousness. He had ridden at an awful pace for many miles with one wheel minus a tire. They also had replaced a tire, and did not secure it properly. When it burst—there is some testimony that one of its mates also burst at the same moment—they apparently performed the too common act of quickly and violently applying the brakes. A wheel collapsed, the car upset. The life was crushed out of one man; the other was quickly conveyed to a hospital with his life trembling in the balance.

While it is given to novelists to conceal to the end the keys to their stories, it is a part of newspaper ethics and practice that the text of an important news happening shall be summarized in the first few sentences. This chiefly that the man who has no liking for details—for the lights and shadows that lend human interest to an event—may gulp the bare facts and throw his newspaper to the hired man or leave it in the streetcar for the information or irritation of the conductor or street cleaning department. It is a duty which every well regulated reporter must perform, whether or not. The Motor World

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GEORGE HEATH,

Of Astoria, N. Y., and Paris, France.

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HOW THE RACE WAS RUN AND WON.

The times given are those announced by megaphone at the official stand, but they are not to be accepted as final or official, any statement to the contrary notwithstanding. The official time cards and checking sheets are in the hands of expert accountants, whose work had not been completed up to this (Thursday) morning. The positions as noted constitute the order in which they passed, and without regard to their standing in point of time.

	1st lap.		2d lap.		3d lap.		4th lap.		5th lap.		6th lap.		7th lap.		8th lap.		9th lap.		10th lap.		Total.
	Position.	Time.	Position.	Time.	Position.	Time.	Position.	Time.	Position.	Time.	Position.	Time.	Position.	Time.	Position.	Time.	Position.	Time.	Position.	Time.	
Heath	4	28:52	2	28:18	2	26:19	1	27:23	1	25:13	1	48:11	1	30:05	1	57:27	1	28:52	1	27:05	5:26:45
Clement	7	27:51	6	34:52	5	29:57	5	51:10	3	29:33	3	31:00	2	30:12	2	33:05	2	30:12	2	30:21	5:28:14
Lyttle	6	37:26	8	38:20	7	38:48	4	37:50	4	38:12	4	37:20	3	1:07:53	3	37:29	*	*	—	—	—
Schmidt	13	46:26	9	36:19	9	40:13	8	1:01:39	6	45:22	6	42:37	5	48:32	4	38:19	*	*	—	—	—
Campbell	2	31:00	12	1:55:21	12	31:20	11	1:03:12	9	35:00	8	31:57	6	56:41	5	51:53	*	*	—	—	—
Tart	15	1:24:47	10	26:10	11	34:10	9	45:25	5	25:40	5	25:49	4	42:44	*	*	—	—	—	—	—
Luttgen	14	52:42	11	54:54	10	29:14	10	1:04:36	8	31:42	7	37:31	*	*	—	—	—	—	—	—	—
Croker	10	27:35	7	27:27	8	58:20	7	1:07:47	7	48:38	9	1:53:23	*	*	—	—	—	—	—	—	—
Gabriel	1	26:57	1	27:14	1	37:26	2	33:30	2	45:52	2	45:33	—	—	—	—	—	—	—	—	—
Webb	3	30:47	4	35:14	6	48:40	6	1:12:38	10	3:08:14	—	—	—	—	—	—	—	—	—	—	—
Hawley	5	28:30	3	28:17	3	28:00	3	31:00	—	—	—	—	—	—	—	—	—	—	—	—	—
Teste	8	24:04	5	25:37	4	25:48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bernin	9	34:08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Werner	12	48:08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Arents	11	52:06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tracy	16	2:29:25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

*Completed lap, but after race had been called off. Each lap, 28:40 miles.

Fastest lap—Tart, 24:04; average, 50.8 seconds per mile=70.9 miles per hour. Heath's average for total distance, 1:09 per mile=52.22 miles per hour.

reporter has performed that duty—and stretched his license in doing so. The real story—the full narrative of the race—is, if not strictly of absorbing interest, rich in color and incident.

MR. "WIFFLE" AND THE INJUNCTION.

The day before the race, and the night before it, Garden City, in the centre of the triangle and off the course itself, was the vortex. It was there that the cars were weighed and it was during the weighing that Heath, the ultimate winner, and Clement, the second man, resolutely declared that before they would submit to having their cars out of their possession overnight they would not start in the race. The unknown and unexpected rule requiring it was quickly abrogater, and that ugly wrinkle smoothed out.

It was late the night before (Thursday) that an even greater, if not wholly unanticipated hitch presented itself. A becoming gentleman appeared at the Garden City Hotel, where President Whipple, of the American Automobile Association, and all other officials and practically every one else who is anybody was stopping.

The becoming gentleman inquired for "Mr. Wiffle." It was suspected that Mr. Whipple was the man wanted. He was found and jokingly introduced to the b. g. as "Mr. Wiffle." He promptly thrust a legal looking document into "Wiffle's" hand. It proved to be an order to appear in court the following day and show cause why an injunction restraining the race should not be granted. The army of newspaper reporters that was hovering near promptly rushed for the telegraph office; it was worked overtime.

Of course, Mr. Whipple obeyed the order. The gathering in court was a notable once and included the donor of the cup which was the cause of it all. The proceedings were not protracted. The court heard the counsel of both sides and then promptly denied the injunction. He told the plaintiffs, the so-called People's Protective Association, that the law plainly authorized the authorities to grant the use of the roads for speed purposes, and

CARS THAT DROPPED OUT.

Driver.	Car.	Cause of withdrawal.	Lap.
Gabriel	De Dietrich	Engine heated	6
Tracy	Royal	Cylinders cracked	2
Webb	Pope-Toledo	Steering knuckle broke.	6
Arents	Mercedes	Overturned	2
Hawley	Mercedes	Springs broke	5
Werner	Mercedes	Cylinders cracked	2
Sartori	Fiat	Clutch	1
Bernin	Renault	Shaft broke	2
Teste	Panhard	Clutch	4
Wallace	Fiat	Clutch	2

CARS THAT WERE CALLED OFF BY REFEREE.

Campbell	Mercedes
Lyttle	Pope-Toledo
Tart	Panhard
Schmidt	Packard
Croker	Simplex
Luttgen	Mercedes

suggested that if relief was desired the legislature was the place to obtain it.

The decision of the court caused no elation or demonstration. On the part of those interested in the race it was accepted as a matter of course.

RESEMBLED A BRIDGE CRUSH.

Friday night the palatial hotel at Garden City was a sight to see. The crowd was so great that to make progress it was necessary for one to elbow his way. It suggested a Brooklyn Bridge crush during the rush hours. Millionaires, gentlemen of leisure, tradesmen and chauffeurs mingled in delightful profusion. Throughout the night motor cars and trains added to the throng. Every bed had been engaged days or weeks before, and every room contained many occupants. The hotel was compelled to suspend rules and men were permitted to sleep—if they could—in chairs. There is even a story that the barber's chair was leased for the night. Chauffeurs slept in cars that were parked in long lines, and, in many places two deep, under the trees of the hotel. The Cleveland Automobile Club "saved the lives" of a number of wayfarers. A party of the Clevelanders came on in a special coach that was run onto a side track. The men slept in the car, and as there were several berths to spare, they "took in" and provided beds and rest for several heavy-eyed rovers unable to find even a chair to sit on.

It was cold and raw and not yet daylight when the whole country was astir with automobiles and horse-drawn vehicles of every age, condition and description. The roads were alive with them. Nearly all were headed for the starting point at Westbury, and in that darkest hour, just before dawn, and in the gray of the dawn the great headlights of the motor cars seen in the far distance appeared as if hung in space, suggesting nothing so much as twin moons or suns floating close to earth. Most of the vehicles stopped at the grandstand at the starting point, near which a large American flag fluttered from a tall staff—the only semblance of decoration or embellishment in evidence. Many of the occupants of the vehicles repaired to the stand; others remained in their cars, which parked in long lines on either side of the road. Not all who came to see, however, so disposed themselves; indeed, it seemed as if the greater number preferred to remain on the road itself. Already a number of the giant racing cars were on the spot "vibrating with confined emotion." Their proximity had no effect on the crowd; if anything, each new arrival semed to draw more spectators from somewhere. The road was black with them, and the efforts of the special constables, blessed with a little brief authority, and of the race officials, were of small avail. The people opened out and formed a human lane only when the first car was making ready to start. And at that very moment a party of apparent affluence in a White steam car and which had apparently imbibed not wisely but all night, appeared on the scene. They were stopped almost on the starting line. Protests and pleadings were of no avail. They refused to budge and made as if to charge the crowd. Once it seemed as if they would run down the dapper referee, none other than W. K. Vanderbilt, jr., himself. It was then that ready hands were laid on the car, and despite the efforts of the occupants, it was rolled aside.

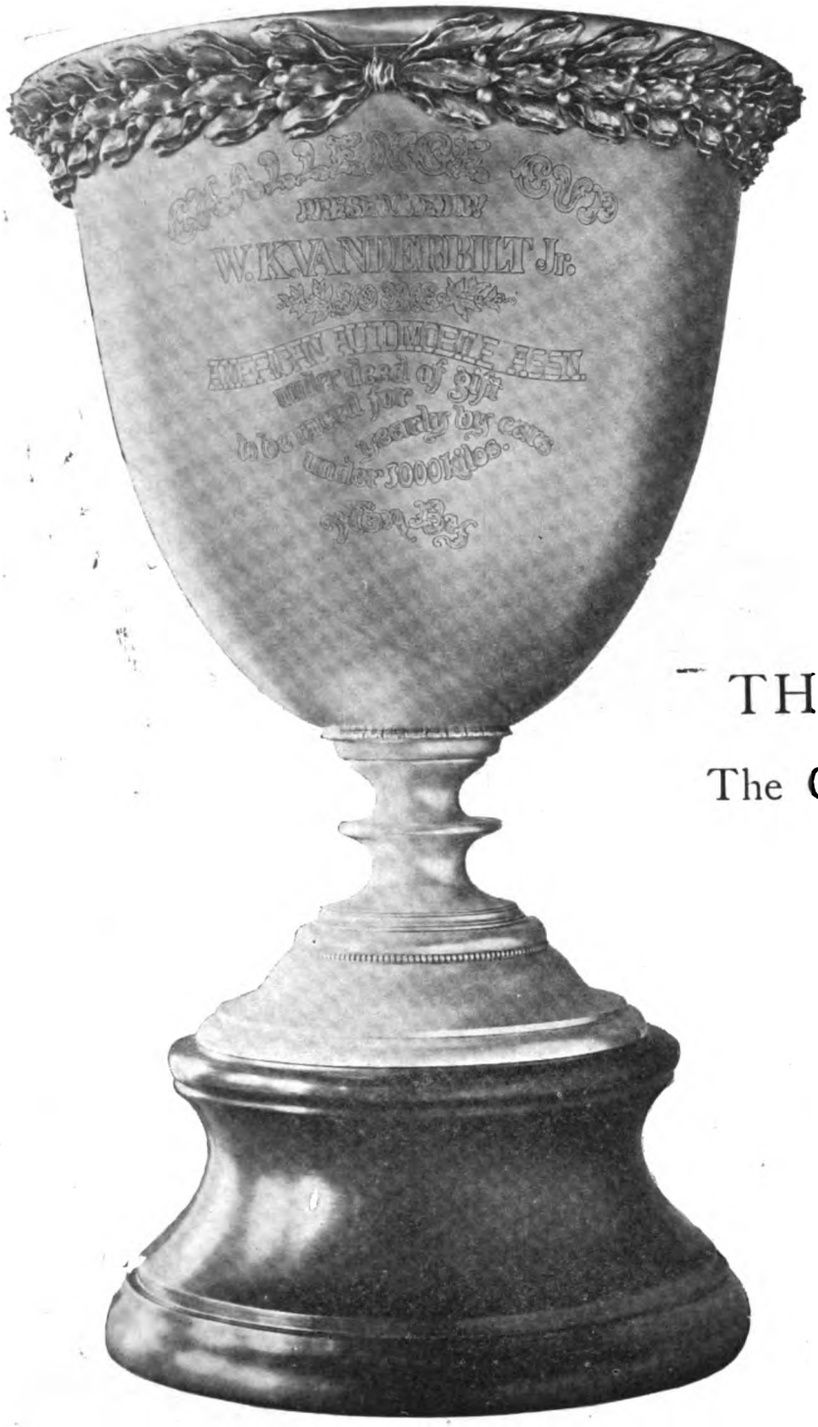
THE START—"GO!"

The first car, S. B. Stevens's Mercedes, driven by Campbell, throbbed and snorted like a demon tugging at its bonds. At 6 o'clock sharp the word "Go" and not a pistol

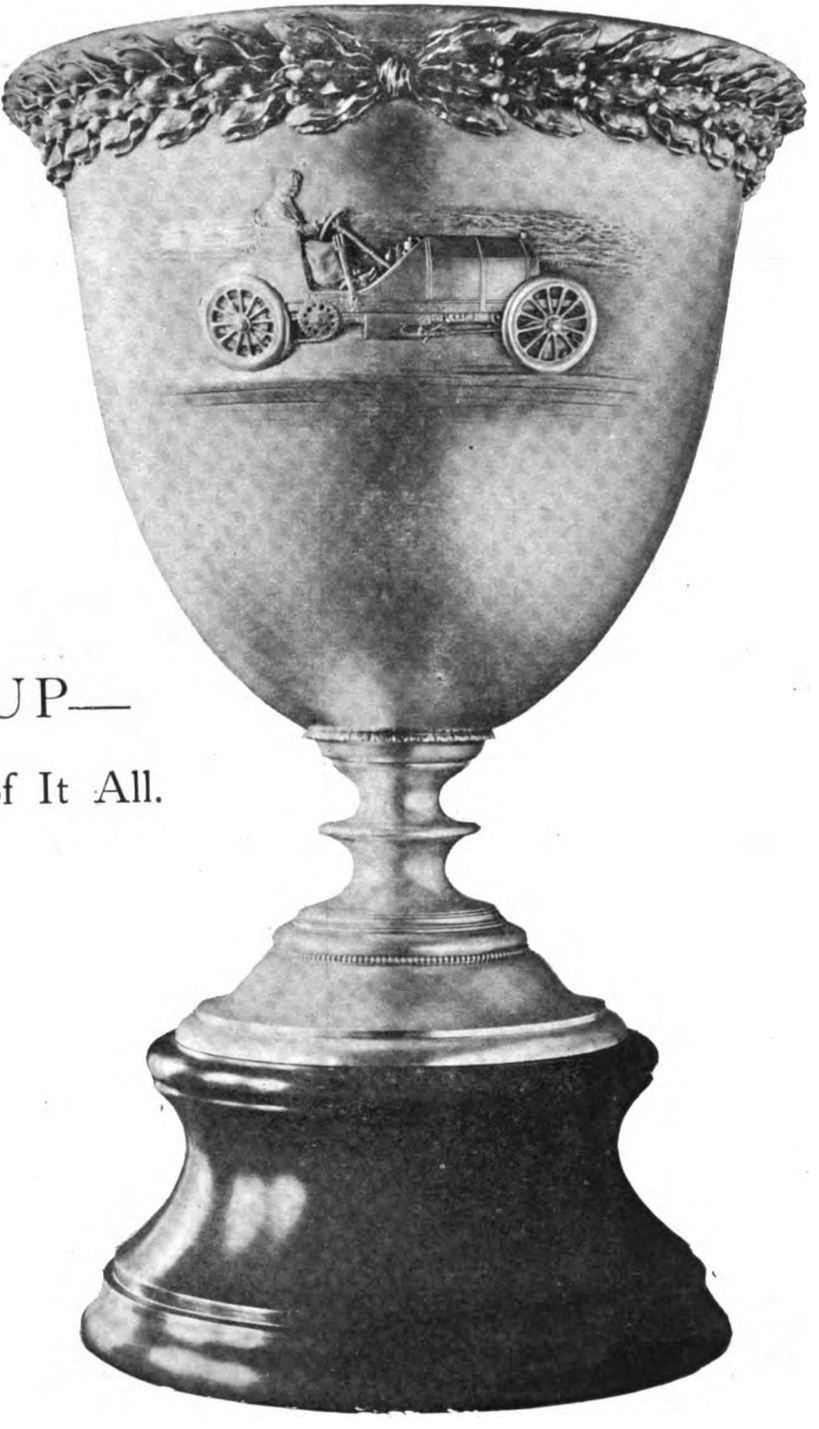
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THE CUP—

The Cause of It All.

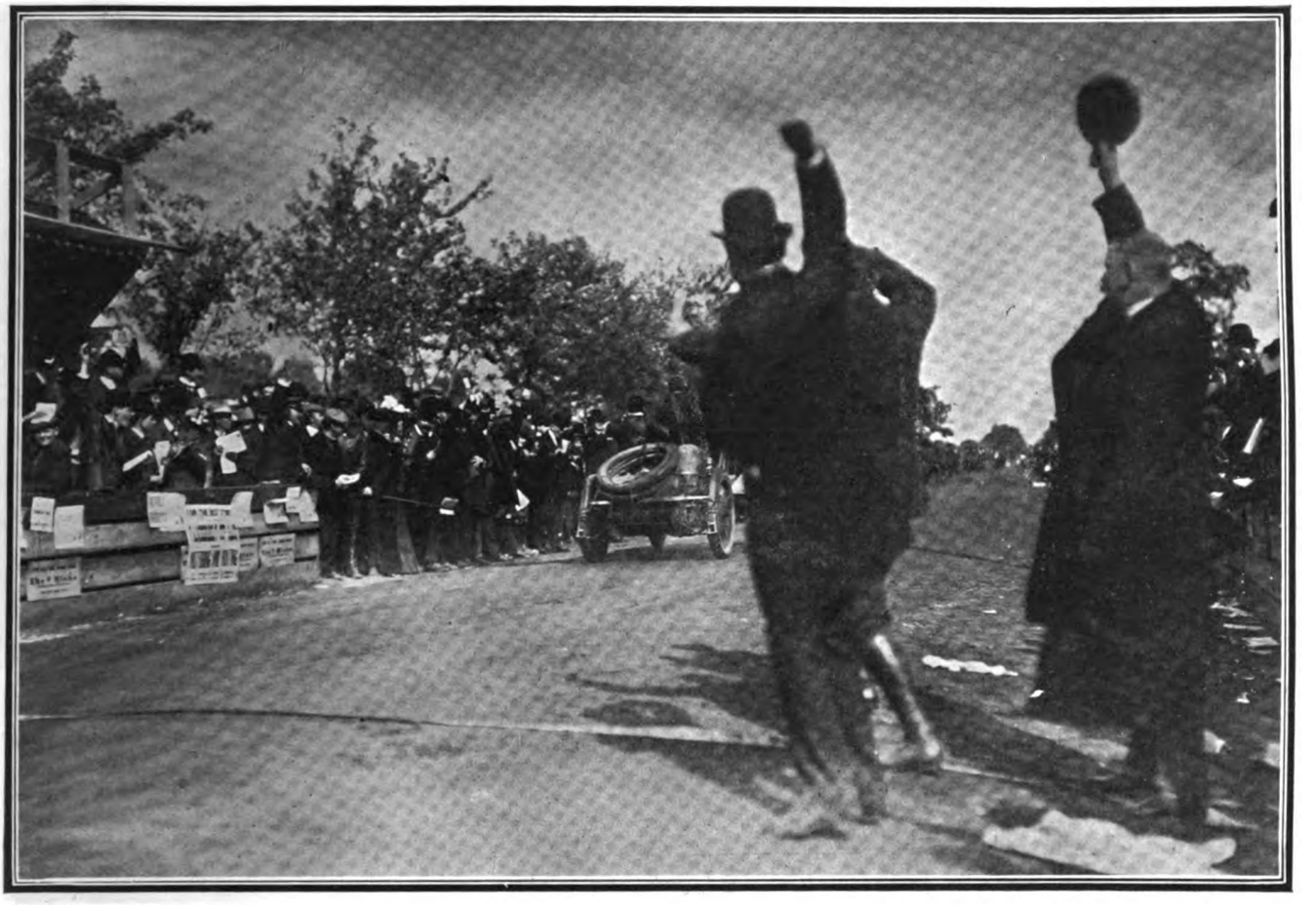


OBVERSE.



REVERSE.

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THE SCENE THE INSTANT AFTER HEATH CROSSED THE FINISH LINE.

shot slipped the leash, and it was off. A few scattered cheers greeted this, the start, of the first really great automobile race ever run in America.

Gabriel, in his long white car, got away slowly, two minutes later. He was much fancied, possibly the most fancied, certainly by the country folk, and was perhaps more warmly greeted than any of the others, which is not, however, saying a great deal. The chill of the morning did not contribute to enthusium. Unassuming Joseph Tracy, in the American Royal, which angrily belched smoke through its four exhaust pipes protruding through the side of the hood like miniature cannon in the turret of a midget warship, received the word at 6:04. The sixth car, No. 6, the 25 horsepower Pope-Toledo, contained what undoubtedly were two human beings, but they did not look it. They were garbed entirely in black leather; even their faces were completely masked in black. They were an uncanny pair, sufficient to frighten any child out of a year's growth. They looked like devils or deep sea divers, and not even his mother would have recognized the figure at the wheel as H. H. Lyttle, who, after working all night to repair a slight break, held up the prestige of American manufacture and skill in a style that has since been the remark of his countrymen. The figures by laps will serve to show how nearly the running of his car approximated clockwork. That other and sometimes or one time American, George Heath, who sought to secure the laurels for France, was in dress the antithesis of Lyttle. Ht was attired as if for a pleasure spin, in a golf or cycling suit, cloth cap and ordinary overcoat. He wore also a standing collar and white puff tie, and looked handsome, healthy and wholesome.

The start, however, was really devoid of incident. Each moment the crowd increased, and the hedge of humanity that bordered each edge of the oiled strip lengthened and deepened, and only when Frank Croker made ready to start and his low- hung car drew up to the line and "backfired' in vicious volleys and rumbled and thundered like a battleship did the crowd evince the slightest disposition to increase the elbow room.

"GOD WAS GOOD TO THEM."

"God certainly was good to them," was the remark at the close of the day of one man who beheld the scenes at the starting points and witnessed the heedless crowds at the dangerous turns. It is not short of miraculous that none was injured. This feature of the race was in striking contrast to the discipline and clear courses that marked the Bennett cup races in Ireland and Germany. On those occasions, a spectator on the road was the exception, here it was the rule. There were no soldiers and not even a blue-coated policeman to command respect. The country constables who served or were supposed to render service did not appear to take even themselves seriously.

Of the nineteen entrants all started, save one, at the times scheduled. The exception was Alfred G. Vanderbilt's Italian car, driven by Paul Sartori. It was due to start at 6:18. It actually started at 8:20:14. In the interim, Sartori was three miles away, straining might and main, to right a balky motor. If Albert G. ever had any hope of having his name inscribed on the great silver goblet given by his elder brother, the hope died early, for even as Sartori started he was disqualified. He violated the rules by making a flying start and was "called off" by telephone at Hicksville, some five miles distant. There was an argument over the 'phone lasting eleven minutes, which resulted in the lifting of the ban, and Sartori restarted. His clutch, however, went wrong, and he stopped "for keeps" about ten miles further on.

The starters, their official numbers, their order and time of starting follows:

No.	Driver.	Make and horsepower.	Representing.	Time of start.
1.	A. L. Campbell	60	Mercedes	Germany 6.00
2.	Fernan Gabriel	90	Panhard	France 6.02
3.	Joseph Tracy	40	Royal	United States. 6.04
4.	A. C. Webb	60	Toledo	United States. 6.06
5.	Geo. Arents, jr.	60	Mercedes	Germany 6.08
6.	H. H. Lyttle	24	Toledo	United States. 6.10
7.	George Heath	90	Panhard	France 6.12
8.	E. E. Hawley	60	Mercedes	Germany 6.14
9.	Wilhelm Werner	90	Mercedes	Germany 6.16
10.	Paul Sartori	60	Fiat	Italy 8.20.14
11.	M. G. Bernin	90	Renault	France 6.20
12.	Albert Clement	90	Clement	France 6.22
14.	M. Tart	90	Panhard	France 6.24
15.	George Teste	90	Panhard	France 6.26
16.	Charles Schmidt	30	Packard	United States. 6.28
17.	Frank Croker	75	Simplex	United States. 6.30
18.	J. Luttgen	60	Mercedes	Germany 6.32
19.	William Wallace	90	Fiat	Italy 6.34

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PRESIDENT H. W. WHIPPLE, A. A. A.

Immediately the last car was dispatched the crowd again took possession of the road. Friends seated in cars left their cars and visited friends in the grandstand; friends in the grandstand left the stand and visited friends in the cars. Acquaintances in neither cars nor stand met and chatted on the road or at the roadside. It was like a huge picnic—an effect which was heightened when hampers were opened in response to the calls of the inner man—and inner woman, for womankind was well represented, and during the chill morning hours remained heavily muffled in bearskins and furs, adding to the picturesqueness of the scene. The officials seemed legion. They were everywhere, and it appeared that every color of the rainbow had been called on to afford distinctiveness to the brassards which each wore on his arm; each man's wide silken ribbon seemed of a different hue, and each bore his particular title, and the caption "The W. K. Vanderbilt, Jr., Cup"—not "Cup Race," just plain "Cup."

THE REFEREE.

As the referee of the race, it follows that Mr. Vanderbilt was a conspicuous figure, and withal a pleasant one. His feats in racing cars and racing boats had already demonstrated that he did not lack courage. His performance as referee was convincing of his possession of brains and ability. His eye was keen and head clear. Nothing appeared to escape him. He was here, there and everywhere. He mingled freely with common folk, was companionable to a degree, and his "Now, gentlemen, in the interests of the race, won't you please stand back?" had more effect on the crowd than any other one thing. He climbed fences, sat crosslegged on the officials' stand, and bore the almost incessant fire of a score of cameras with unfailing good nature. When, early in the day, word came that one of the contestants had been killed, he took a doctor in his car and speeded to the rescue. It proved a false alarm, but he was not satisfied until he had seen the alleged victim in person. When, after the race, young Clement came up to lodge his protest, Referee Vanderbilt had the laugh on the newspaper men who crowded around. None could understand French. The referee was familiar with it, and only he was able to comprehend what Clement was saying.

Not so conspicuous, but very much in evidence, was A. R. Pardington, the chairman of the A. A. A. racing board and of the Cup commission. The brunt of the work had fallen on his shoulders, and for a month at least he had had few minutes that he might call his own. Witnessing the fruit of his hard labor well performed, he was as quiet



A GLIMPSE OF THE GRANDSTAND—THE VANDERBILT BOX.

and unassuming as ever, but he looked worn and weary, and as if he longed for the rest that would soon be his.

WHAT THE SPECTATORS SAW.

Approaching the grandstand was a bend in the road that hid the cars from view until within a quarter of a mile of the line. It was not until the cry "Car coming!" was heard and taken up and repeated that the crowd scampered and formed the narrow human lane through which the flying cars passed repeatedly, or until near the end of the day, when a rope was obtained and stretched, forcing the crowd back to the edge of the road and thus widening the lane somewhat. To descripe one lap is to describe all.

"Car coming! Stand back!" . . . Scarcely has it died away and necks have scarce been stretched to better see it than, "It's Gabriel!" goes up. . . . A whizz. . . . A thundering white beetle of heroic size fairly skimming the earth darts by. . . . A buzz of conversation; a fluttering of programmes. . . . A tall, cadaverous individual places a megaphone to his mouth and faces the grandstand. . . . "Car num-ber 2; time, twen-ty-six min-its, fif-ty-sev-en a-n-d two-fifths sec-onds," he would drawl. . . . Pencils seek programmes. . . . A buzz of conversation.

Nine times this happened, while the sun



HEATH IN PENSIVE MOOD.

waxed warm and men and women doffed their furs and became less like Esquimaus and more like Americans.

Several times the cry, "Two cars coming!" added a thrill of excitement. But the cars did not fly past abreast. One merely trailed the other in "After you, sir," aspect. The moment, or the next moment after, they cleared the clustering crowd the rearmost would pull to one side and in a flash dart past the other. It was at such times that the grandstand was at a disadvanatage. Necks were not long enough to follow the scene. The men on the road had a clear view and could see it all. Possibly it was because they realized their advantage that they held so tenaciously and regardless of danger to their positions.

THE MAN WITH THE MEGAPHONE.

The megaphone was a useful institution. Spectators were kept intelligently informed. They knew what was occurring. At the great races abroad they either guess at it or suck their thumbs in ignorance. It was so at the Bennett Cup race in Ireland; it was so when the contest for that trophy occurred in Germany. In this respect the Vanderbiltonian affair was distinctly superior. When a contestant was overdue, the splendid telephone system kept the officials informed of the cause, and the megaphone man as promptly shared the information with the public. The people knew when Tracy broke his shaft and when tire troubles and other mishaps delayed others. In the main they were knowing spectators, too. When Gabriel came by rather slowly their quick ears discerned something wrong. "His motor's skiping," was the word that passed along.

THE HEATH-CLEMENT DUEL.

For more than six hours this sort of thing continued. Once it was relieved by Heath. At one of the controls he had been told that

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he was leading. When he passed the grandstand he removed a hand from the steering wheel and saluted. The crowd responded with mild applause. Then Heath had his tire troubles, and the young Frenchman, Clement, tucked snugly in what looked like the footgear of the "Old Woman who lived in a shoe," began to crawl up. The crowd showed its excitement. On the eighth lap Clement forged ahead. He passed the official stand more than two minutes to the good. The crowd applauded, and not a few of the many Frenchmen who were in evidence at all points betrayed symptoms of incipient hysteria. The French lad was still ahead at the close of the ninth lap—1:48 to be exact.

HEATH WINS AND KEEPS RIGHT ON.

Heath had picked up a few of his lost seconds, but it did not now seem that he would win. It all seemed over but the shouting. But the crowd had its doubts, and remained on edge until word came from Queens that at that point Clement was one minute behind. There was an animated buzz of relaxation, and when Heath hove in sight he was acclaimed heartily. It was the first outburst of real enthusiasm. The referee and donor of the cup forgot his position and joined in it. Heath displayed no consciousness of it all. He drove full tilt up to the line and over it. If in his make up there is aught of the "grandstand player" he gave no evidence of it. Each second was doubtless too precious. He gave no heed to the cheers, if, indeed, he heard them. Without slackening his pace a jog, he went on. He did not stop until he reached his garage, five miles distant. That is why a number of checkers were mystified and why Heath appears on their sheets as having passed their stations eleven times. Never was there a more modest victor.

CLEMENT LODGES HIS PROTEST.

It seemed much longer than it really was before the "Car coming!" cry denoting Clement's approach was heard. There were still others making the rounds of the course, but they were far behind, and the crowd had now no thoughts of or for them. The loser's lot is rarely a happy one. But he had been such a good loser and put up such a grand fight for 250 miles at least that when Clement dashed across the line he was as wildly cheered as Heath. When, ten minutes later, he came back on foot, supported on either side by friends and with a retinue of jabbering Frenchmen in his wake, which was constantly being increased by curious Americans, the crowd gave him an ovation. But Clement seemed deaf, indeed, he looked like a wild man. He had doffed his leather headgear and his goggles, and only the upper part of his face was white; the rest of it was black with grease and grime. His eyes rolled and he was wildly excited. He sought the referee, and found him in the press box.

THE CROWD BREAKS; RACE STOPPED.

The word passed that he was lodging a protest. It was enough for the crowd. It broke like a drove of sheep scampering after a bell wether and charged the press box, where Referee Vanderbilt and young Clement were exchanging a rapid fire of French. While the road was thus congested a couple of cars parked in the field at the roadside pulled out on the course and headed in the direction of New York; others immediately "took the cue" and did likewise. The officials and constables, or some of them, made manful efforts to beat back the tide. They pleaded and stormed and swore, but to no purpose. At any moment one of the giant racing cars might swing around the bend in the road. A frightful tragedy was imminent, or at any rate was being invited. The crowd cared naught, and those who of right and decency were expected to help and obey the officials flouted them. The automobilists simply blocked the road with their cars. There was no stopping them. The race officials were at their wits' end. But quickly it was decided to stop the racers at all hazards. Every telephone to every control and corner was brought into use. "Stop the men at all costs!" was the message sent.

Again was God good to that heedless crowd All the racers were stopped before they reached the surging mass of humanity, and its skin remained whole. But it was a bitter pill for Lyttle and Schmidt and Croker and the others. Officially the road was open to them for more than an hour, and to the men bent on finishing, "no matter how," it is gall and wormwood to be forced to quit. It roiled Lyttle so greatly that after the crowd had thinned he continued around the course for the tenth time that he might say that he had completed the whole distance. But no official cognizance of it was taken.



CLEMENT COMES TO PROTEST.

THE PROTEST AND ITS REJECTION.

When Clement was made to understand that he must reduce his protest to writing, he did so in this communication addressed to the referee:

"Under Article No. 56 of the road race rules, I beg to submit for your consideration the following protest for some penalization on time and loss of time which I sustained on account of timers and checkers applying erroneously some of the rules of the race.

"First, when arriving at Hempstead on my eighth lap the timer gave me my card. My chauffeur then did give some attention to my motor. The timer, seeing this, protested that I had no right to do any sort of repairs while in neutralization, and asked me to hand him back my time card. I at first refused, but fearing unknown decisions I handed back my card.

"The timers counted carefully the time I spent fixing up my motor, and put in my box the newly corrected card. As I had full right to attend to my motor personally while inside the neutralization, I claimed that this change in my time was unduly done, and to have the same deducted from my total time.

"Second—At Hicksville, while I was at the line ready to leave, I wanted to spend the remaining time in giving some little attention to my motor, but the timer absolutely prevented me, and in spite of my protests stated most strongly that he would not permit me to do so. I therefore had to push my car out of the control to attend to my business.

"In not respecting my rights the timer has been the cause of my losing the remaining time to expire before my order to leave plus the time I spent in pushing my car out of control after being given my start. This occurred twice at the same place, and cost me one minute, at least."

At about midnight Referee Vanderbilt announced the disallowance of the protest in this language:

"In answer to the first specification of M. Clement's protest I have decided as follows: That M. Clement had no right to stop and make repairs undertaken after entering and before proceeding through the control; having been warned by judges and timekeepers, his original card was recalled and properly corrected on his failure to comply with instruc-

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ttions, and that M. Clement, if he had followed the order given, would have consumed, as required by the governing regulations, six minutes in passing through the confines. Therefore his claim for lost time in making repairs after due instruction of judges and timekeepers is disallowed.

"In answer to the second specification, alleging that he was obliged to push his car from the exit of the control, the evidence does not sustain the statement."

At the "Curve of Death" in Jericho.

At Jericho, a scant three miles from the starting point, was what those wise and thoughtful exponents of journalism known as the "yellows" termed the "Curve of Death." Approaching the town is a sharp Y; in the apex itself is a stout tree; in line with the apex of the Y is a country store, in which is located the postoffice; immediately adjoining is a grocery. The "yellows" had resorted to lemon hued mathematics, and figured that if a snorting "red devil" attempted to tear around the curve at a million miles a minute it would fly off at a tangent, split the little postoffice into kindling wood, paste postage stamps on the pickles in the grocery and smear the landscape with rich, golden butter and axle grease, while postmaster, grocery boys, chauffeurs and a few spectators would become angels and soar in company to the pearly gates. It was an alluring picture, full of "action," excitement and color. And as immediately after rounding the sharp bend there was another wide, sweeping curve which skirted a little pond, the combined prospect of probable "developments" was enticing. "Go to Jericho" was the injunction of every man to every other man when a desire to find the best place to witness excitement was expressed. Every newspaper man coveted the berth. They all scented a "story." The "yellows" all had men and cameras trained on the spot. The picture of a big automobile butting into a United States postoffice, with the attendant mangling of limbs and splashing of red gore, would be worth "big money" to any paper, whether red, white or yellow. It was worth "going after"—worth waiting for. In consequence of the "fame" thrust upon the little dot on the map there was a fair crowd and at least a dozen automobiles gathered at the Jericho turn. There were many women and children in the assemblage. Apparently they had not read of the fearful prospect outlined for the postoffice and grocery, for fully three-quarters of them congregated on the front stoops of those very buildings—and not a hair in their heads were harmed; not a baby boohooed for fear of the "red devils" during the whole long day. In fact, one of the women, whose garb betokened wealth, stood with a little boy under the tree in the very triangle formed by the fork in the roads. The little fellow wore a Buster Brown outfit, and the lady was evidently his mother. Just as one of the "demons" waltzed not ungracefully around the turn she was heard to say to him:



"Some day you may be driving one of those," indicating the disappearing car. "Won't that be nice?"

The little fellow seem to have doubts on the point.

"Why, it isn't every little boy that has the chance," she responded.

If a real yellow journal had heard the remark it might well editorialize on the degeneracy of womankind and the perils of the future generations!

In the early morning a far distant click, click, click, that seemed to come from over the hills in the rear of Jericho, was the first thing to convey the knowledge that the race had started. It was not realized at the time, but as the day wore on the meaning of the sound—the echo of the approaching car—was realized. The click would be heard long before the car hove in sight.

It is not to be denied that on the first lap or two there was apprehension. When the cars came near to the turn the crowd instinctively moved out of its "angle of action." The two signalmen, with their flags, moved with the rest, a little slower perhaps and somewhat sheepishly, but they moved. When a spectator sought the protection of the lone tree in the triangle, one of the white flag wavers expressed himself.



THE "CURVE OF DEATH!"

"Better get away from there!" he advised almost authoritatively and with one eye down the road.

"Want it for yourself?" asked the other fellow, half derisively.

The drivers, like the spectators, gained confidence on each succeeding round. On the first lap Heath, Teste and Croker negotiated the curve in splendid style, Teste perhaps best of all. But it was Croker who evoked the first few cheers, of which there were not many at any time. While all of the others cut off power or reduced speed before reaching the Y, the big, good natured son of the "ex-boss of New York" came up like a cannon ball, and was rounding the corner itself before he seemed to slow ever so little. He swung wide, and his engine emitted a noisy volley of "backfires," but he was safe, and it was so spectacular that a buzz of admiration swept the crowd and a few cheers broke. When Hawley came up he seemed timid or undecided and slewed away over. Bernin and Clement also skidded badly, but it was not until Wallace approached that there was a vestige of excitement. Fire and smoke were shooting out of his engine and his gears were grinding. He made the turn and came to a stop. His gears had locked fast. His chauffeur leaped out, and it seemed scarcely a minute before he had made matters right and resumed his seat. The car started slowly and seemed about to stop. At the first sign the chauffeur jumped out again, and as he did so the big car bounded forward and knocked down the chauffeur, the rear wheel passing over his leg.

HOW WALLACE EXCHANGED CHAUFFEURS.

Then followed a remarkable exhibition of quick wit and agility. A little foreigner who was standing near grasped the situation in a twinkling and leaped aboard the car, and was off with it while the crowd was yet groaning. It all happened so quickly that it is safe to say that Wallace did not know of the accident or realize the sudden and unexpected change of chauffeurs.

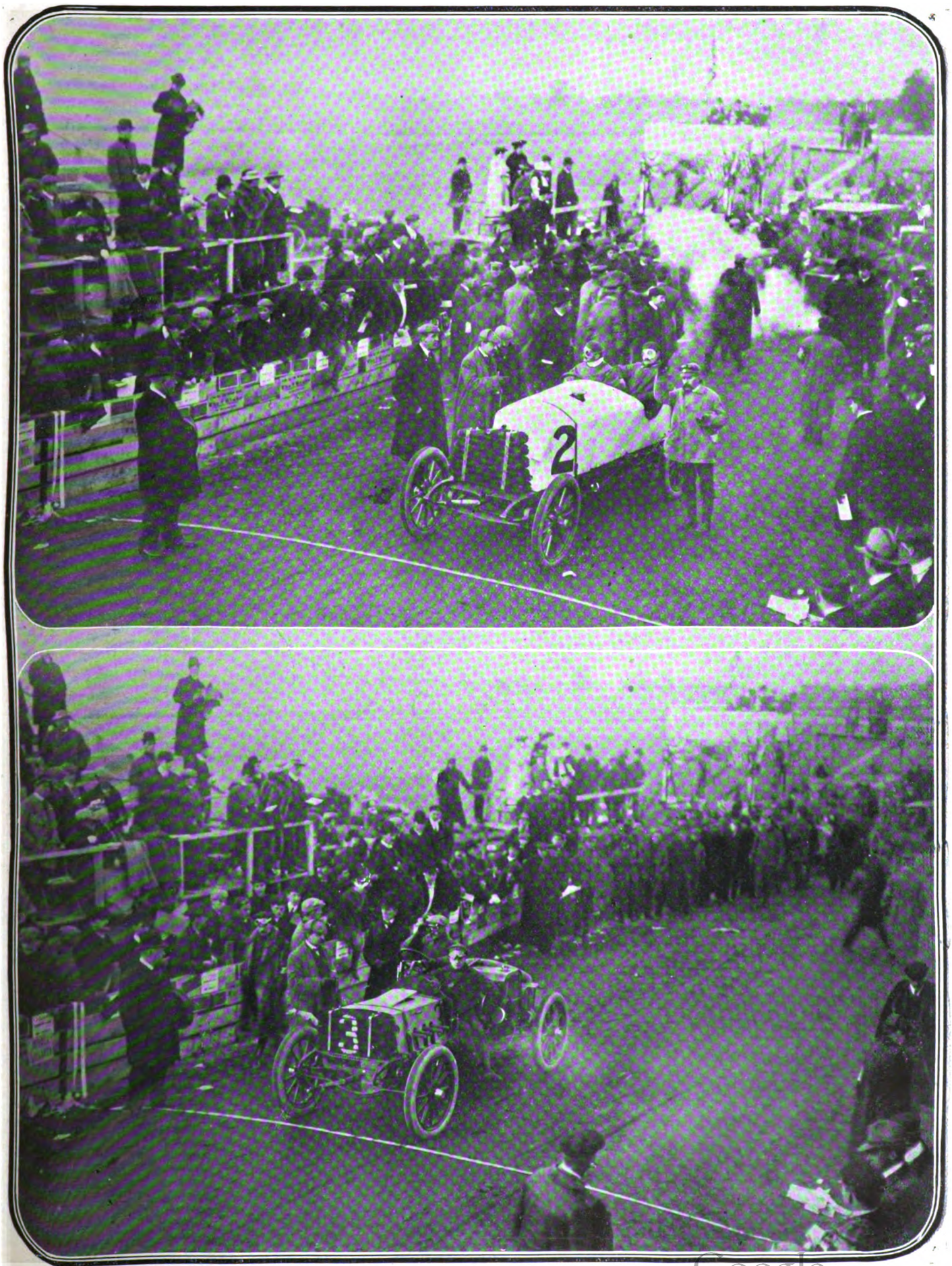
"If he stops again he'll have an interesting time," remarked a man who picked up Wallace's starting crank, which had been dropped in the road during the flurry.

The injured chauffeur was carried to the Diamond Rubber Co.'s tent nearby, and soon recovered, and within half an hour was regaling himself at the hotel bar, unconscious of the wild rumors of his death that swept the course. The watchers at Jericho did not realize how alarming had been the rumors until Referee Vanderbilt himself dashed up in his car with a doctor to learn the particulars. He was not content until he had interviewed the man himself.

During the day Jericho itself heard rumors of various killings, based on garbled and confused reports of the Arents accident, and also heard that the telephone man at Hicksville had been mobbed. But the closest resemblance to an accident that the crowd saw

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Awaiting the Word "Go!"



TYPICAL VIEWS OF THE START. NO. 2, GABRIEL; NO. 3, TRACY.

Photographed exclusively for The Motor World.

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THE OFFICIALS' STAND AND PRESS BOX AND PHOTOGRAPHERS' PERCH.



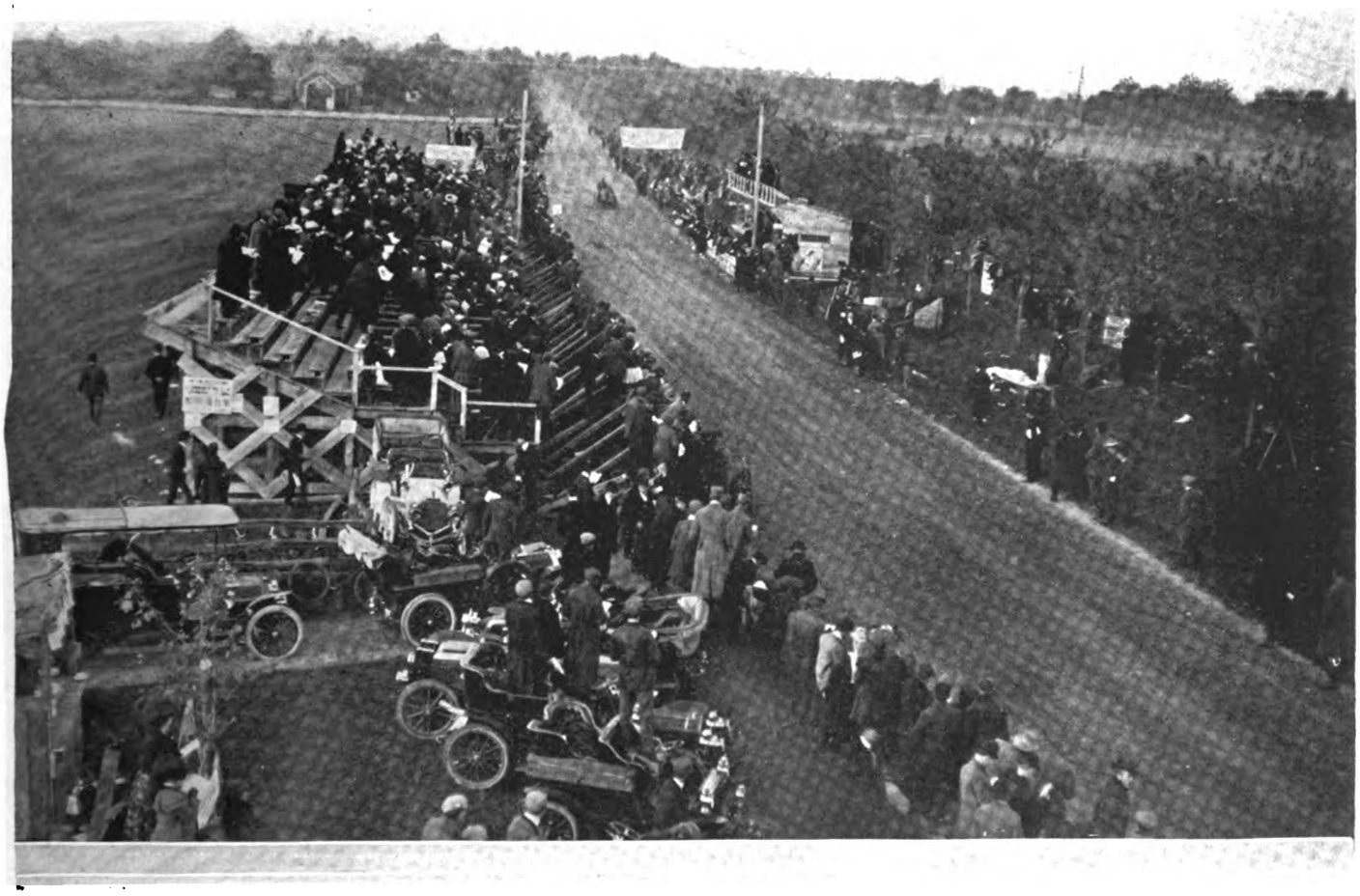


THE GRANDSTAND.

Photographed exclusively for The Motor World.

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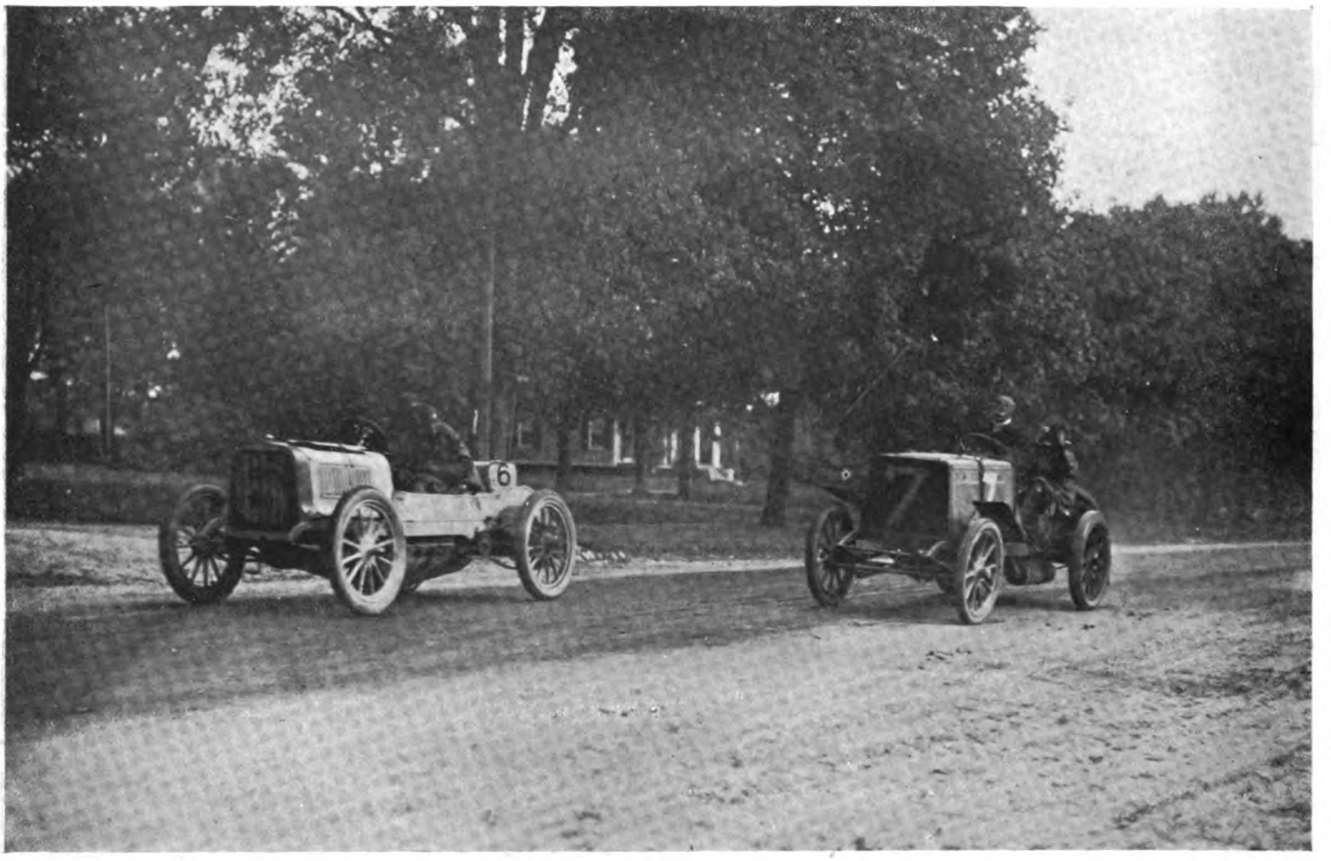
Birds-Eye Views at and Near the Starting Point.





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HEATH OVERTAKING LYTTLE IN THE HEMPSTEAD CONTROL.



SCENE AT HEMPSTEAD CONTROL.

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Scenes in the Hicksville Control.

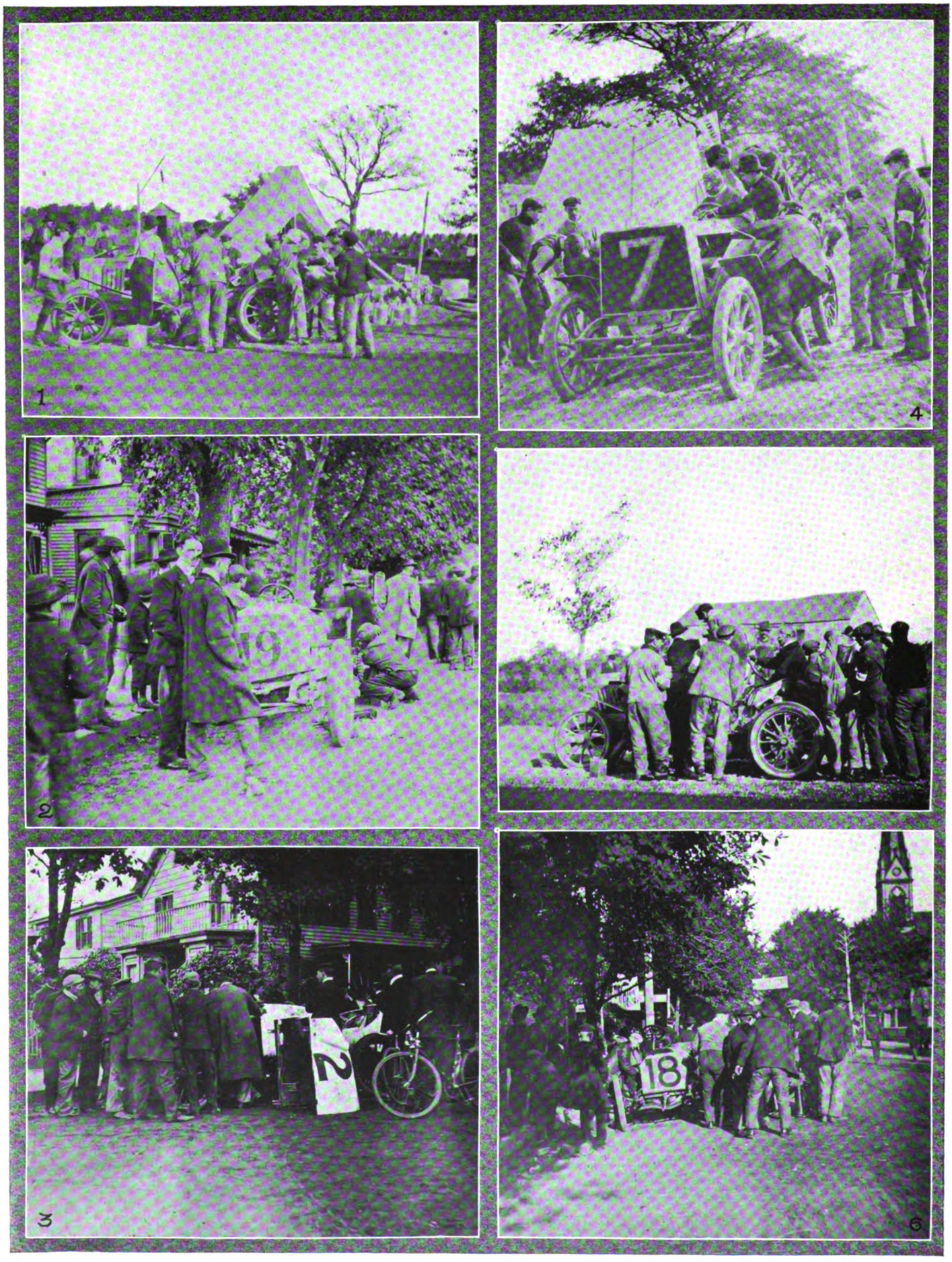


1.—BICYCLIST PILOTING LYTTLE. 2.—CAMPBELL ARRIVES. 3.—CLEMENT ARGUING.
4.—BICYCLE PILOT RUNS AWAY FROM HEATH.

Photographed exclusively for The Motor World.

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Where There Was "Something Doing."



1.—TRYING TO REPAIR TESTE'S CLUTCH. 2.—WALLACE "EN PANNE" AT HICKSVILLE. 3.—GABRIEL DITTO.
4 AND 5.—HEATH'S ARMY OF HELPERS AT WORK. 6.—LUTTGENS IN TROUBLE.

Photographed exclusively for The Motor World.

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At the "Ticklish" Corner in Queens.



TART ROUNDING THE TURN.



THE CROWD HEEDLESS OF DANGER—THE WAITING AMBULANCE ON THE RIGHT.

Photographed exclusively for The Motor World.

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One Hour with Referee Vanderbilt.



Photographed exclusively for The Motor World.

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was on the second lap, when Luttgens, driving Isidore Wormser's Mercedes, swung around the turn. He skidded frightfully, ploughed up the sand in the roadside ditch and seemed about to upset. There was a breathless moment, then the left front tire exploded with terrifying force. Luttgens stopped for a moment and then went on with his tire flat. Only the American tire makers had stations at Jericho. There was no help for the German there.

WHEN CROKER'S TROUBLES BEGAN.

On the very next round Croker exactly duplicated Luttgen's performance, and while his noisy motor cannonaded the atmosphere he pulled out of the sand with his left front tire flat and wobbly. His car was fitted with Diamond tires, and the Diamond tire station was on the spot. The car pulled to one side, the Diamond men went at it with a will, and in fourteen minutes by the watch all was well again. During the operation Croker, wearing a sweater and headgear, and looking for all the world like a stalwart college football player, was calm and collected, just as his chauffeur was all excitement. Only once did Croker seem perturbed. There was some fumbling in inflating the tires and they were not pumped hard enough. He saw seconds slipping away. "Pump 'er up! —— —— it! Pump 'er up!" he finally exclaimed in vigorous English. The chauffeur added a few selected words of his own. The repair completed, Croker took his seat in the car while his "man" turned the crank. The engine did not start promptly. The man threw expletives at it and got it going. They moved a few yards, then stopped, then started, then stopped again. The chauffeur hopped out. Even the insects in the air fled from the heat of his words. The second speed was found to be stripped. Croker threw in the "high" and was off, the cannonade of the motor fairly awaking the echoes.

THE YELLOW "EXTRA" ARRIVES.

On the second round Gabriel was away ahead. It induced a young man with a roll of bills to produce them and offer to bet any part of $400 that the Frenchman would win. Later he changed to Heath, but he could find no takers and drove away in disgust in a buggy. Gabriel seemed to be a favorite with the Long Islanders, and they followed him closely. About noon a couple of men with armsful of a New York yellow journal appeared. They must have known the predelection of the residents and that Gabriel had joined the ranks of the missing. "Extra! All about Gabriel killed!" they shouted. They charged five cents for the penny sheet and reaped a small harvest. The men did not linger, and perhaps it was well. There was not a line in the paper about an accident to the Frenchman.

The most reliable budget of news that Jericho received was when Joseph Tracy arrived, not in his Royal racer, but as a passenger in a White touring car.

"First broke my transmission rod," he said when questioned, "but found a blacksmith shop and made a new one. Then two cylinders cracked, and as there wasn't a foundry convenient I had to quit."



CHAIRMAN PARDINGTON.

Some one who heard him ventured to remark the great superiority of the American drivers and to disparage the foreigners. "You ought to see the Americans make these turns," he added.

Tracy refused to agree with the sentiments, and said so.

"The Frenchmen may not slam around the turns," he said quietly, "but they make them and get away a great deal quicker, and that's what counts."

And so the day at Jericho wore on. The "red demons" and "devil wagons" resolutely refused to kill any one or to demolish the postoffice. The postage stamps and the pickles remained safe to the end.

DISGUST!

"Say! Wouldn't this make you tired?" disgustedly said a long Island resident toward the close of the race. "I picked out this place and have hung around all day to see something doing, but I'll be damned if I haven't seen more excitement at the horse races on the road at Huntington—and nobody ever tried to stop 'em with an injunction, either."

In the Hicksville Control.

Compared with Hempstead, Hicksville was a minor control—one of but three minutes. But it made its share of history, and it was proud of its "bicycle boys" that piloted the big cars through the town—and, b'gosh! most of the boys beat the ortermobeels to the tape, too. Most of the pilots on bicycles really did seem possessed of the idea that it was necessary to see how fast they could cover the four-tenths of a mile between the two tapes.

Hicksville also had the honor of "entertaining" the first unfortunate, William Wallace. On the very first lap, and less than six miles from the start, he arrived with the spring of the clutch of his Italian F. I. A. T. broken and impossible of release. The car was drawn to the side of the street, and remained there, though a half dozen men tried vainly to repair it. Wallace meanwhile roamed restlessly. He had practised self-denial for two months in preparation for the race, and the thoughts of what he had missed appeared to come before him.

"For two months," he remarked half ruefully, "I refused every drink that was offered me, and I am afraid none of my friends will invite me now."

SARTORI'S GREAT SURPRISE.

Mr. Wallace is also a member of the A. A. A. racing committee and of the Vanderbilt Cup commission. He was in Hicksville when the long delayed Sartori arrived in A. G. Vanderbilt's car—also a F. I. A. T. It was at Hicksville that the telephone message to stop and inform him of his disqualification overtook Sartori. The control judge duly informed Sartori of the fact, and waved him to the side of the road. The judge speaks English only; Sartori speaks only French; ditto his chauffeur. The judge was having a hard time of it trying to make himself understood when one of those Frenchmen who seemed to be all over Long Island stepped up and offered to act as interpreter. The offer was not refused. When Sartori grasped the meaning of it all the amazement that overspread his features was a study for an artist.

"Pour quoi? Pour quoi?" he asked.

"Pour quoi? Pour quoi?" echoed his chauffeur.

None could give him more information than that he had "disobeyed the orders of the referee."

More amazement. More "Pour quois."

Finally Wallace stepped up and learned the cause of the argument.

"Let him finish the round," he suggested.

The control judge refused to go behind his instructions.

"Damned shame!" ejaculated Wallace.

"Will you speak to Mr. Pardington?" asked the judge.

"You bet I will," and Wallace repaired to the telephone and spoke with him for quite some time.

The upshot of it all was that Sartori was permitted to restart, but he did not go far. The clutch of his car went wrong exactly as Wallace's had gone wrong, and he was not seen in Hicksville again.

It was while all this was going on that a young couple stood on the sidewalk surveying the scene.

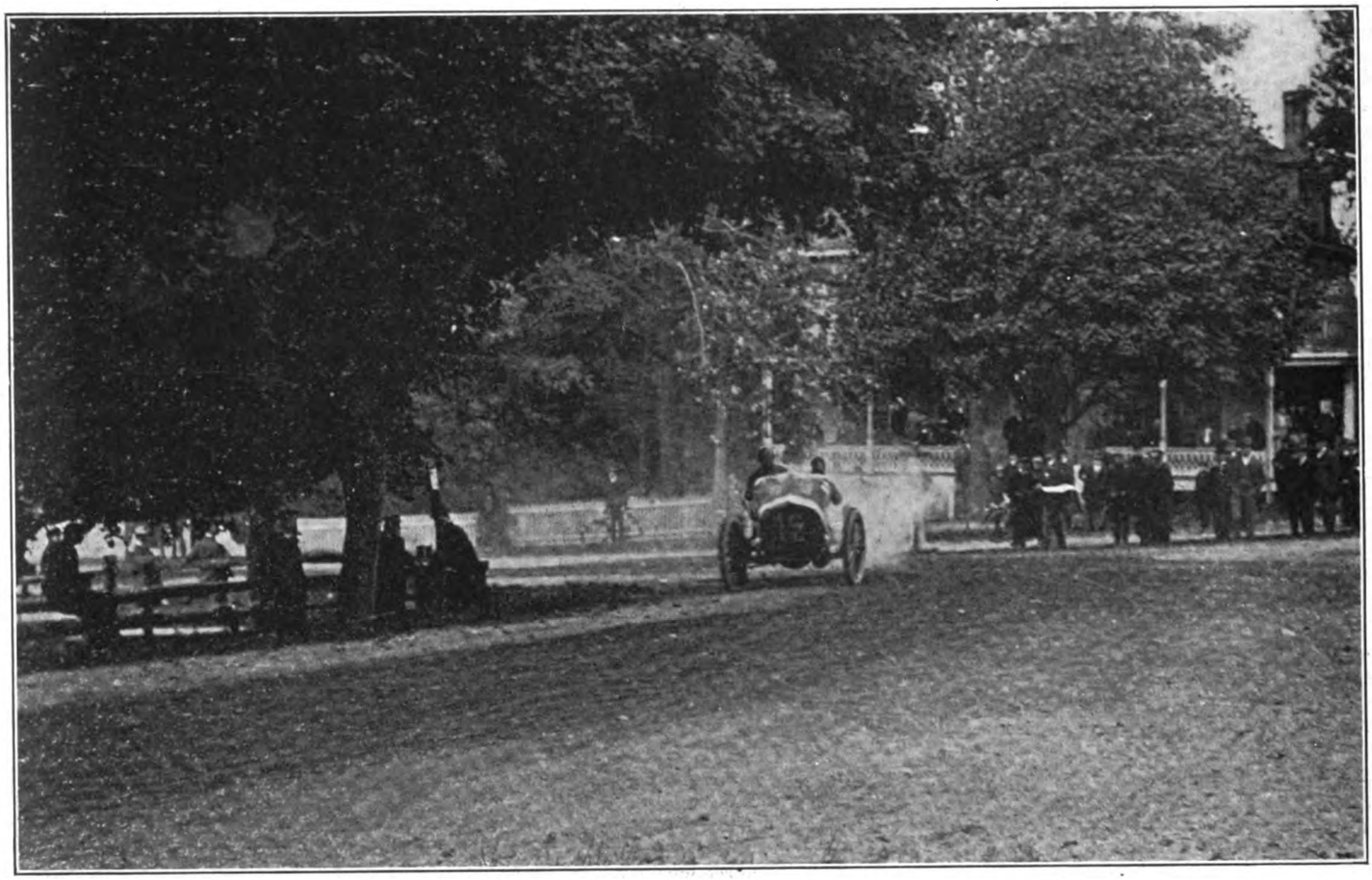
"Isn't it terrible?" remarked the young woman.

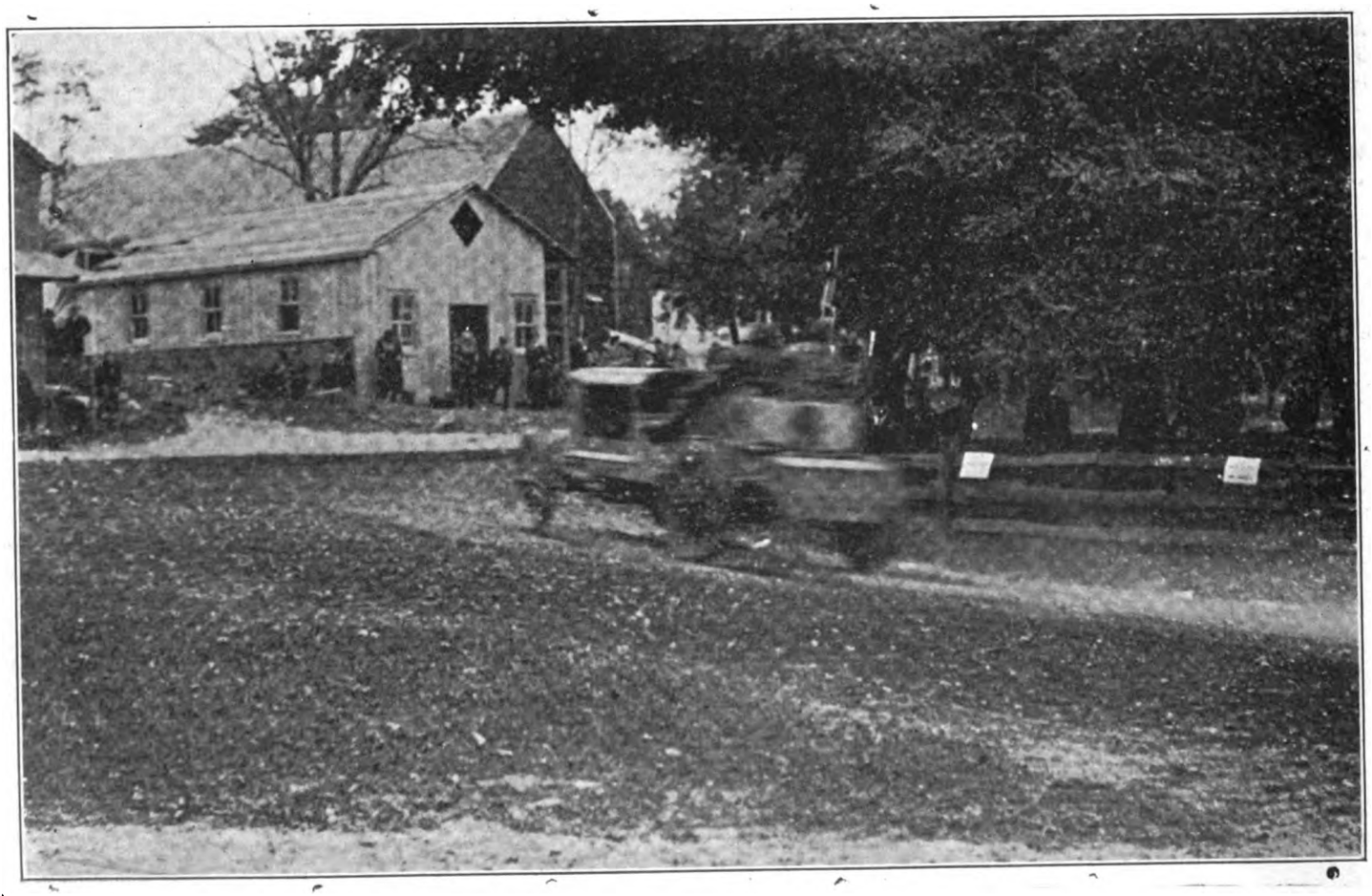
"I don't see anything terrible about it," responded the young man in a tone that implied either brother or husband.

"Well, I do," she retorted decisively, "and I think those men ought to be able to find something better to occupy their time."

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Negotiating the Turn at Jericho.





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THE EXCITABLE CLEMENT.

It was at Hicksville, too, that Albert Clement performed some of his choicest genuflections and gesticulations. It has been said that he learned English in two weeks; and perhaps he did. But his hands and his eyes talk a language of their own. He and they seemed always quivering with excitement. Once he drove over the boundary line of the control.

"Where in hell are you going?" was the question that promptly assailed him.

He must have understood that English, for he jumped out like a shot and helped push his car back to the line. Clement seemed to have an argument ready nearly every time he came around. He had been stopped once while making some minor repairs within the control limits, but the very next time his chauffeur again tinkered with the motor while it was on the line. Again was he ordered to stop.

"Ha! What I do?" he asked volubly. "They say I can work. He say no." The remainder was lost in the lingo of France.

GABRIEL DOWN AND OUT.

It was at Hicksville, too, that Gabriel—Gabriel, the renowned and the daredevil—hauled his De Dietrich to the side of the street and left it there. He previously had had carburetter troubles, but it was an overheated engine that caused his pretty white car to hug the Hicksville curb for so long. Not all the Frenchmen in Hicksville could get it going again.

It was here also that Croker sustained another puncture and again effected a repair in fourteen minutes. Previously Luttgens had arrived with not only a flat tire, but a flat rim. He lost twenty-five minutes while both were being remedied.

At Plain Edge—Another "Curve of Death."

Plain Edge, a couple of houses surrounded by pumpkin fields, and marking the crossing of the Hicksville-Massapequa and Bethpage roads, was another "Curve of Death," where, according to the "yellows," lives probably would be snuffed out as a sacrifice to "speed mania." Reporters and cameras were there to record the snuffing. The fact that the two roads crossed at right angles and formed an acute angle which on the narrow road absolutely prevented turns at speed was apparent to all thinking beings, who quickly eliminated Plain Edge from their lists of "danger points." Only the officials and "yellow" reporters gathered there. It was the loneliest spot on the course, and the little crowd faced starvation. They were saved only by the opportune and unexpected arrival of an itinerant pie wagon. Although the owner of the pies might readily have obtained triple prices for his wares, he asked only "usual rates." This was the rule everywhere. The Long Islanders made no effort to fleece their visitors. Two or three enterprising natives erected "grandstands" along the course, and were really the only ones badly bitten. The stands were absolutely deserted. The chief cry was for food and drink, and as the forenoon aged some of the natives awoke to the fact, and the sandwich was paraded in force and silenced the growlings of many empty stomachs.

Like all of the other corners, the Plain Edge turn played its full part in playing havoc with tires, but the only real thrill that was experienced by the watchers was when Gabriel overtook Lyttle. The latter ran wide, seeing which the sharpeyed Frenchman cut the corner and passed the American on the inside. It was a beautifully executed movement, which gave rise to a cry of "Foul!" on the part of a few patriots. They conceived that Gabriel had crowded Lyttle. But the charge was baseless. Tart was another man that evoked admiration by the way in which he made the sharp turn. He would cut of power, apply the emergency brakes and simply skidded around—a delicate manœuvre that he repeated skilfully several times.

CONSTABLE REALLY MAKES AN ARREST.

It was at Plain Edge that the only known arrest of the day was made. A party in a touring car essayed to pass while the racers were approaching, and was stopped and warned away. The driver did not accept the warning in good part, and a heated argument ensued. It was finally ended when some one whispered into a constable's ear:

"Pinch him! He has no license number on his car."

The constable performed the "pinching," and never was a man more taken aback than when the obstreperous individual found himself under arrest.

At the Hempstead Control.

It would naturally be supposed that at Hempstead, which is, next to Queens, the largest town on the course, a considerable number of spectators would have gathered. This was not the case, however. At six o'clock, the hour of starting, a score or score and a half would be a fair estimate of the number scattered along the main street of the town. As the morning wore on others came, some from the adjacent residences, others from greater distances, until there were close to one hundred people standing watching the race and discussing its various phases. Probably a quarter of these were congregated at the beginning of the control.

"Here comes one! Clear the way there; make room for it!" shouted one of the beribboned and soon to be hard worked officials of the race, as he waved his arms at the handful of spectators gathered at this point to urge them to seek places of safety.

The car was not yet in sight, but from the east came the subdued but sharp, spiteful staccato sound of an exhausting engine, rapidly increasing in intensity as the invisible monster drew nearer. A slight bend to the north, not quite a mile away, shut off further view. It was broad daylight, although the laggard sun was hidden behind gray clouds. The air was still keen, although greatly moderated from the frost point of the pre-daylight hours. A faint mist was slowly and reluctantly withdrawing, as if it recognized the futility of longer resistance to the onslaught of the strong waxing day.

WHEN GABRIEL REACHED HEMPSTEAD.

"There she is! Ain't she coming?" cried a voice suddenly; and, "Yes, yes; see her?" chorused half a dozen more, as an uncanny looking and swiftly moving object swept round the bend and came into plain view. It was low, and at that distance resembled nothing so much as a gigantic beetle, with rounded nose close to the ground.

"It's No. 2," cried a dozen voices in unison, as the outlines of that numeral, Brobdingnagian in size and covering the entire front of the bonnet, were revealed to view. Straight as an arrow, and with speed that seemed to double with every second, it came, looming bigger and bigger, and the thunder of the exhaust filling the air. Some of the bystanders who had retired to the side of the road went back still further as the fearsome looking thing came on without a suspicion of speed slackening. But suddenly, when still 150 and 200 yards away, the clutch was slipped out and the throttle closed. On she came with scarcely diminished speed, but at about thirty or forty feet away from the tape the brakes were applied with such force as to lock the rear wheels and cause the heavy car to slide along and come to a stop two or three yards beyond the tape; its driver, the cool and self-possessed Gabriel, goggled, gloved and well wrapped, little of him showing except his black mustache, shifting his position slightly as if to relieve himself.

An alert and businesslike official stepped up, marked the time of arrival on the piece of yellow cardboard, calling "6:19," as he did so, and nodded to the Frenchman to go on. A boy bestriding a bicycle, on his arm the inevitable broad ribbon—white and inscribed "Pilot"—started in front, but soon pulled to one side as Gabriel pressed him close, and the two disappeared down the road.

He had scarcely cleared the next block when another car, which hove in sight as Gabriel entered the control, dashed up at a pace scarcely less swift than the latter's. This was No. 1, the Stevens Mercedes, driven by Campbell, who had started from Westbury two minutes ahead of the Frenchman and been caught and passed before half the first lap had been covered.

"Six twenty!" called the timer, as Campbell came to a full stop. Waiting only to have his card vised, he released the brake lever, threw in his clutch and was off, in company with a second pilot.

SPEED LAWS ARE ABROGATED.

"Gosh! They didn't lose any time gettin' here," remarked a native who had been an interested spectator of it all. "Guess they didn't stop to observe no speed laws."

Located at the eastern and western ends of Hempstead Village, the control measured 1.4 miles. The cars were given six minutes in which to cover this distance; if they took less than that time they were held at the

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western end until the six minutes expired; if more than six minutes were taken a penalty was imposed. They all took less than six minutes—very, very much less.

At the eastern end of the control two tapes were laid across the road, about twenty-five feet apart. Between them each car had to come to a full stop, its time being taken then and not before. Overhead, pendant from a wire strung across the road on poles, was a piece of bunting lettered to denote the control station. At the side of the road was a high platform, on which were perched the three timers and scorers. Everything had been capably planned, and the plan carried into execution. The precaution—a very necessary one as it proved—of raking a covering of gravel and sand over the oiled road between the tapes and for about twenty fet behind the first tape had been observed; in this way the wheels of the oncoming cars would get plenty of traction and be able to check their speed quickly.

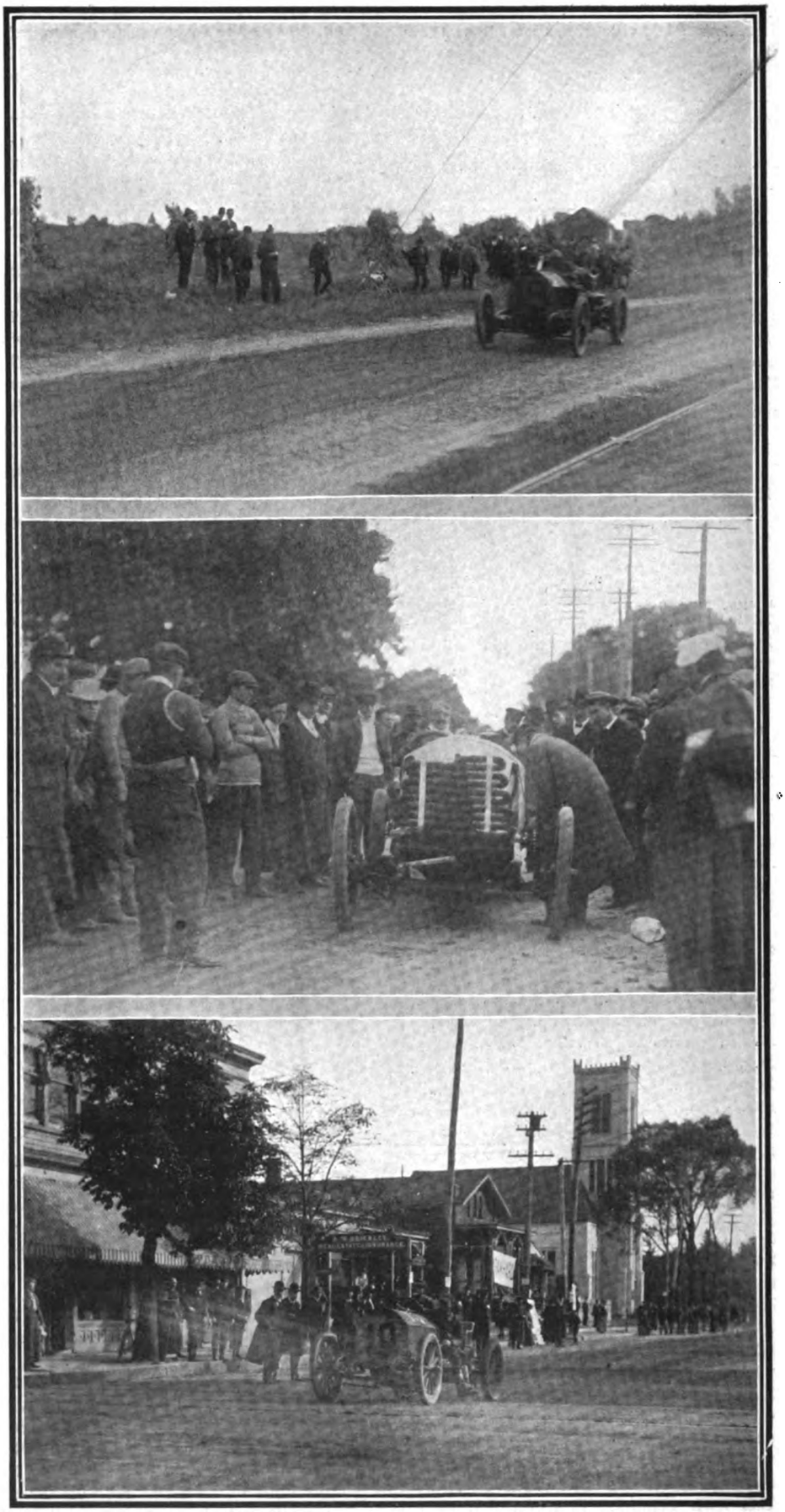
ARENTS'S FIRST MISHAP.

Several minutes elapsed after the passing of Campbell before the next car was heard in the distance. As it approached the exhaust was seen shooting out from the side of the bonnet, and it scarcely needed the sight of the number to see that it was Tracy's Royal, which, starting two minutes behind Gabriel, had lost four minutes. A short distance behind him came A. C. Webb in the 60 H. P. Pope-Toledo, while right on the heels of the latter was the Arents Mercedes. In his eagerness to catch Webb, Arents came on too fast. Too late, he put on his brakes so hard that his car skidded, went to the right hand side of the road and ploughed a deep furrow in it, turned half way around and burst a tire, at the same time dislodging the mecanism from his precarious seat and landing him in the road. Nothing daunted by this contretemps, however, Arents continued on after getting his time, with his tire flat and bumping on the rim.

"Guess I'll climb a tree if any more come like that," remarked the native already referred to, after Arents had disappeared down the road. This raised a laugh, as he had been one of the first to run for cover, and the car had never got within a dozen feet of him.

TAKING CHANCES WITH FLAT TIRES.

Heath, who went through Hempstead at 6:30, was even then a marked man. He handled his car with rare skill, coming fast to the control but stopping it without locking the wheels. Indeed, after the first round or two, all the contestants learned to gauge the distance better. Lyttle, in his little 24 H. P. Pope-Toledo, entered the control with Hawley in the E. R. Thomas Mercedes; both were given the same time. The next four men were Bernin (Renault), Clement (Clement). Tarte (Panhard) and Teste (Panhard), who passed in that order after a remarkable speed duel; each had made up some of the distance on the driver in front of him, Teste having gained more than a minute on Tarte. Teste travelled the fastest coming into the



WHERE THE CROWD DID NOT ENCROACH.

GABRIEL IN HEMPSTEAD.

CROSSING THE HEMPSTEAD CAR TRACKS.

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control of any of the contestants, yet he made a splendid stop.

That the drivers were bent on taking desperate chances was shown on the second round. Gabriel had just gone through when Campbell came into the control. His left hand front tire was gone completely, yet he shook his head when it was pointed out to him, and went off at once.

BICYCLE PILOTS "CHUCK IT."

At a few minutes after 7 o'clock the bicycle pilot brigade gave out. There were only half a dozen boys in it, and they had volunteered to take the cars through the control at the legal speed and see that no repairs were made within the boundaries. There were not enough boys, in the first place; and it proved to be too strenuous a life. The racers paid little attention either to the boys or to the speed limit; they outspeeded both, and the boys came to the conclusion that the sensible thing to do was to "chuck it," which they did.

Although six minutes between control bounds was obligatory, few of the contestants took that much time. Twenty or twenty-five miles an hour was as slow as most of them seemed to want to go. The foreigners, in particular, were troublesome. In the centre of the town, near the corners of Fulton and Main streets, was the police station, and adjoining it the railroad station. In front of the former a stout policeman took his stand and attempted to restrain the impatient drivers.

FAT POLICEMAN'S PROTEST.

As Heath approached on his second round the stout myrmidon of the law struck an impressive attitude and raised his hand and cried:

"Go slow there; go slow."

Heath gave him a look out of sleepy looking eyes, and went by without slackening. The officer looked disgusted.

Then Charles Schmidt, crouching low in his seat and going nearly thirty miles an hour, hove in sight. Again the policeman sought to check him, and with an equal lack of success. A third time he tried, one of the Frenchmen being the offender. The latter looked at the policeman inquiringly but uncomprehendingly—and drove on.

"Do you see that?" he inquired, turning to a bystander. "That's the way they observe the speed limit. If I had my way I'd stop them.

"What is the use of it all, anyhow," he went on. "They're crazy. Everybody's going crazy over automobiles. Ripping around the country in this fashion! It's disgraceful, that's what it is."

"Why don't you get out in front of them and make them stop?" asked a man in overalls—evidently a railway engineer or fireman—with a wink to a group of interested spectators.

"Stand in front of them? Think I'm a fool to let one of them jabbering Frenchmen run over me? Not on your life," sputtered the officer. "That ain't what I'm hired to do"—and, seemingly to prevent further discussion of the matter, he walked up to the corner and took his station there.

It was now nearly 8 o'clock, and the crowd was slowly increasing in numbers. Commuters would stop a few minutes and watch until a car whizzed by and then take their way to the waiting train. Teams would drive up and discharge a load of people who had evidently come to stop and watch the race. From the trolley cars which crossed the course at this point parties disembarked, many of the with newspapers in their hands, which they scanned as each car went by and so identified them. Everybody was interested in the race; those who had the time to spare devoted it to watching the contest, while those not so fortunately situated looked their regret.

"Goin' to watch them, Bill?" asked a friend as a man with a big basket in each hand stopped on the sidewalk for a minute.

"No, I got to 'tend to my orders, darn it," was the reply.

PHOTOGRAPHIC SUPPLIES EXHAUSTED.

Enormous was the demand for photographic supplies, but the supply was infinitesimal. The Motor World man wanted a roll of films, and he waited patiently for the only photographic establishment in Hempstead to open. Seven o'clock arrived and passed, and half past seven likewise; then eight o'clock, and still the place was closed. A Winton car drove up and a couple of men alighted and rattled the door, but without avail. A few minutes later the much sought merchant came strolling up and was immediately surrounded by a group of would-be customers.

"Awfully sorry," he said, raising his hands deprecatingly. "But I'm all sold out. That's the reason I did not think it worth while to open sooner. The only thing I have left is a few rolls of films for the smallest size cameras.

"Next time there is a cup race down here I'll be prepared for it," he continued. "Why, I have been overrun—completely swamped. Sold out late yesterday afternoon and thought I had supplied everybody within fifty miles of here.

"How much stuff have I sold?" he repeated, in response to the Motor World man's inquiry. "Well, I usually carry stock enough to last me three weeks. In preparation for this race I laid in a double stock on Thursday. Yesterday afternoon it was all gone. Why, I even sold a $25 camera to a man who bought it principally to get the films it was loaded with. He said he didn't want the camera particularly, but he did want the films.

"No, you can't buy any films any place else in Hempstead. Hicksville and Jamaica are the nearest places, and I shouldn't be surprised if they were sold out, too."



A TIRE REPAIR.

At the end of the Hempstead control matters moved with clocklike regularity. Beribboned officials were there ready to take the cards of the arriving contestants and hold the latter until the six minutes allotted for traversing the control had elapsed. On the south side of the road was a telephone box, from which the arrival and departure of each car was reported to headquarters. A man with a rake put a fresh coat of gravel on the road in front of the tape at frequent intervals. In a field at the north side of the road was a Diamond tire repair station, which, however, had nothing to do. A tent had been pitched, and inside of it was a goodly stock of tubes, covers, lugs, etc., while in front of the entrance, ready for instant use, others were disposed.

"PANNE" THAT DEFEATED CLEMENT.

It was just 8:40 when young Clement got the word to go, but instead of darting off at breakneck speed to finish his fourth round he drove over to the side of the road and stopped his car. Then he descended, followed by his chauffeur, and looked at his engine with a mixture of disgust and despondency.

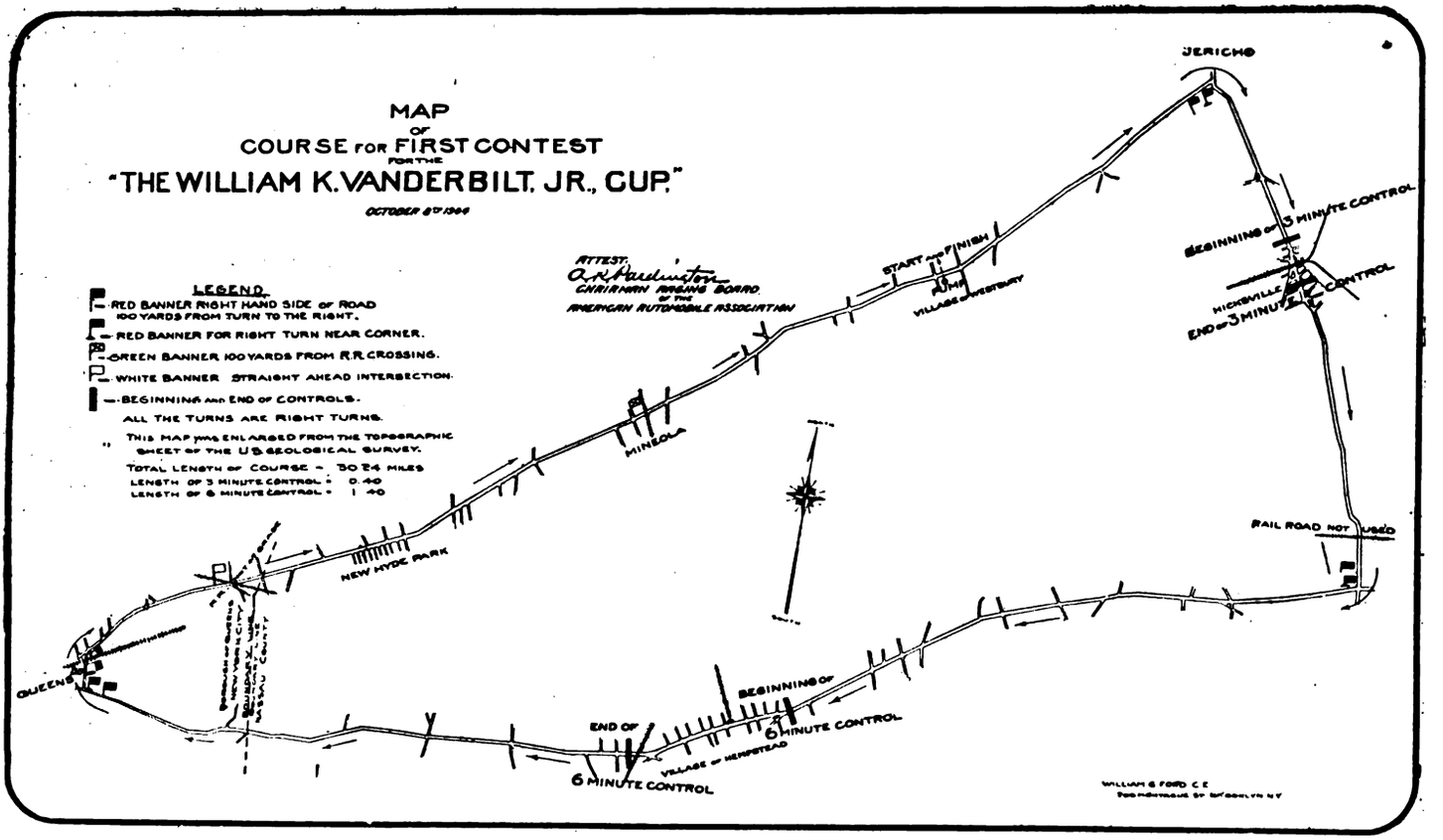
"De feet pipe," he said, in his imperfect English as an official approached him.

The latter walked over to the telephone, called up headquarters, and said:

"Clement, No. 12, has a broken feed pipe, and has pulled out of the control to repair it."

Both Clement and his mecanicien sized it up as a bad job. The former, who stood with goggles pushed up over his cap, had his face around the mouth covered with oily dust; and the contrast between the grimy spot and the white of the upper part of his face where the goggles had protected him was grotesque in the extreme. He surveyed the car for the space of fully half a minute, then said something quickly in French. Instantly the two men set to work. The mecanicien raised the bonnet, exposing the engine, while Clement brought out a couple of boxes filled with tools and odds and ends of all kinds. The pipe which fed gasolene to the carburetter was almost broken, one end just hanging by a thread. The mecanicien took it off and the two men selected a piece of rubber from one of the boxes and set to work to splice it to the pipe that was fast to the engine. It was a small job, apparently, but it took about twenty minutes, and the Frenchmen's looks showed plainly that they

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regarded it as putting them out of the race for first place.

As it proved, this was Clement's only delay of consequence. Every other lap was made in good time, and it was only the accidents the other contestants encountered that later brought Clement into the first place which he lost to Heath on the last round.

HEATH WEARS HIS DIAMOND.

Clement was still at the control, on his fourth lap, when Heath entered it on his fifth round. While waiting for the signal to start Heath's mechanicien tinkered with the engine, adjusted a nut or two, and took off the cap of the cooler to see that the water supply was all right. He then made as if he would unfasten the bonnet, just as Heath said to the timer:

"How long have I?"

"Twenty seconds," replied the official.

"Assez!" cried Heath. "Sauter!" ("That will do; jump!") Each word was like the report of a pistol.

The mecanicien started as if he had been struck, dropped the bonnet fastening and hurriedly scrambled into his seat beside Heath. The latter sat quiet, but intent, waiting for the starting signal. His face and mustache were covered with dust, clear up to the goggles. A glimpse could be caught of a negligee shirt of mixed pattern, over which was a dust bespattered puff tie that had once been white; its folds were held in place by a diamond cluster pin. Around his neck the pendant ends half concealing the tie, was knotted a handkerchief. His hands were enclosed in gauntletted gloves, a check cap covered his head and his tall form was enveloped in a long coat, which just permitted a view of legs clad in plaid woollen golf hose. He was a picture of repressed energy and grim determination.

"Go!" cried the starter, and then a marvellous thing happened. The car leaped forward as if discharged from a catapault; on the smooth road immediately in front of the tape appeared as if by magic two straight lines of oily gravel, marking the course of the rear wheels. The Motor World man looked at the two little ridges of dirt dumfounded; there seemed something uncanny about it, a bit of necromancy that sent cold shivers cavorting along the spine. The car had disappeared in the distance, leaving its trail behind, caused, no doubt, by the suction of the tires when the power was applied with full force.

RUMORS THAT WERE AFLOAT.

The air was full of rumors of accidents. There was a bystander knocked down and fatally injured at the Queens turn. Over at Jericho a car had dashed off the road and killed both driver and mecanicien! A few miles west on the Hempstead road a car, said to be No. 5, had turned turtle and killed both men! So the stories ran, with no one to vouch for their accuracy.

THE TIRE AND SUPPLY MEN.

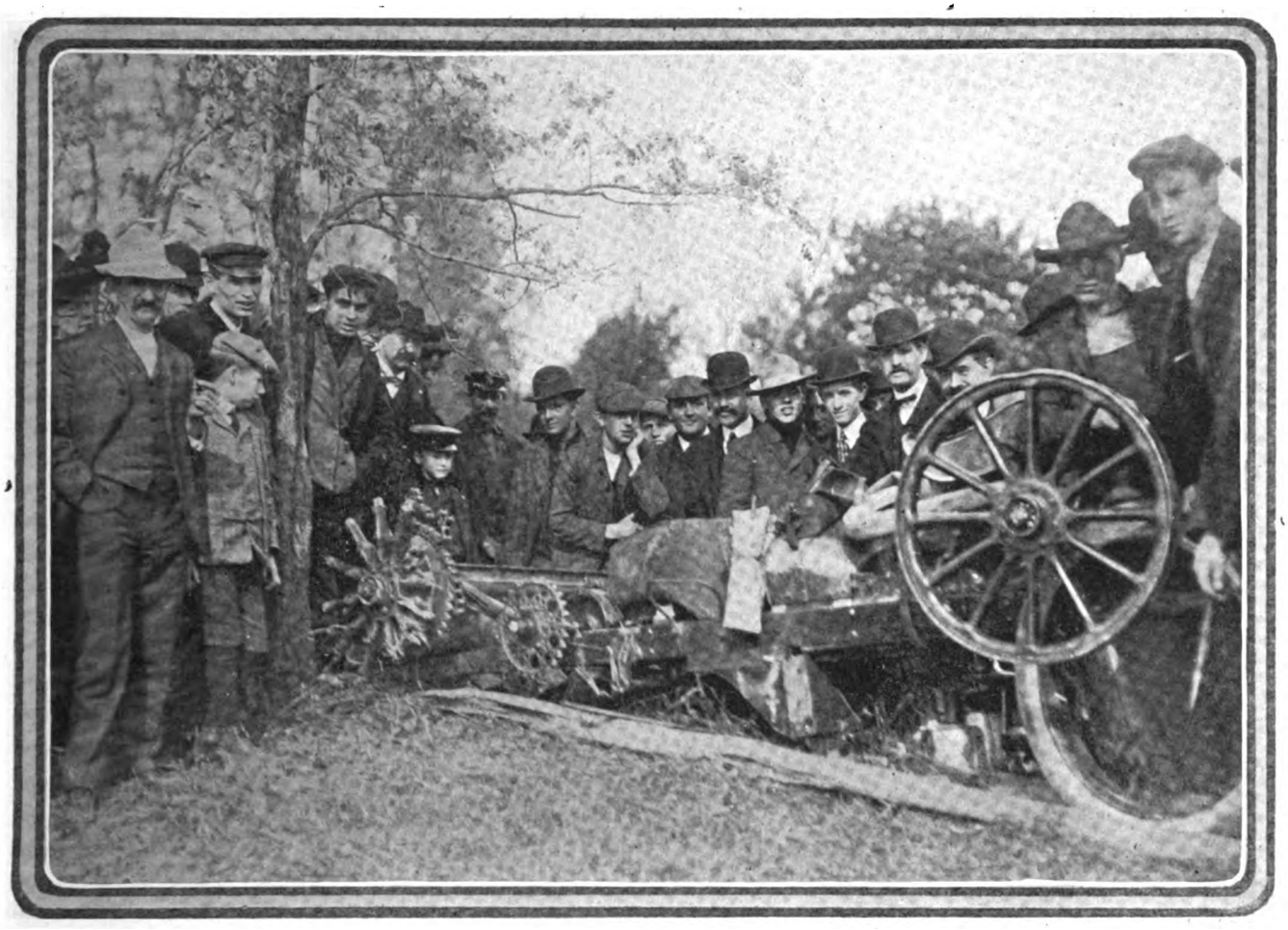
It was at the repair and supply tents of the various and automobiles represented in the race that the arrival of each car caused real action. To see the men rip off a flat tire, replace it and inflate it was a scene calculated to make men blink, but it was as nothing to the scene when a car arrived and supplies were necessary. It was seen at its best at Hempstead, where most of the tents were located, just outside the control lines. A dozen men would jump for the car as if to storm it. One had the wrench necessary to remove the tank cup, another held the funnel ready for insertion the minute the cap was removed; at his elbow was the man with the gasolene. Three other men performed similar service with lubricating oil, while other men stood ready with buckets of water for whatever purpose. It was an inspiring sight, and the French concerns, rich in experience, had their men well drilled, and their system acted like clockwork. Occasionally there were mixtures of French and American oaths and shouted orders, but usually every man knew his duty and performed it well.

THE DIFFERENCE IN FRENCHMEN.

It was at these places, also, that the calibre of the contestants came to the surface. Men like Clement and Teste were all excitement, and fretted and fumed volubly over the slightest hitch, while others, like Heath and Tart, were as cool as cucumbers. Tart, who had made great gains and seemed a likely winner, was unruffled even when it was found that his refractory clutch could not be repaired. He heard the news without demonstration, and accepted it like a philosopher. He said nothing, and sat down as calmly and unconcerned as if in his own house.

The road between Hempstead and Queens, while not so good as the Bethpage pike, was wider and sufficiently smooth for the racers to let out almost to their limits. On the left hand side of the road going towards Queens ran the trolley tracks, and it is typical of the

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THE WRECK OF ARENTS'S MERCEDES.

disregard of danger shown that the line was in regular operation throughout the day. What might have happened had one of the swiftly moving trolley cars and a more swiftly moving motor car met at any one of the several sharp turns in the road is a speculation not to be relished. No accident of the sort occurred, however, and, as elsewhere, Providence watched over the crowd of pedestrians, cyclists and motorists who heedlessly made use of the road during the contest, and who massed at the dangerous Queens turn in goodly numbers.

THE ACCIDENT TO ARENTS.

The Arents accident happened on the second lap, and, as stated, the car turned completely over, pinning the chauffeur under it and crushing his skull so badly that he died shortly after reaching the hospital at Mineola, to which he was carried in the ambulance which forethought had waiting at the Queens corner. Arents himself was thrown clear of the machine, and he too was picked up unconscious and carried to the hospital. He remained unconscious until Tuesday, and, while badly hurt, his recovery is now assured.

What happened is largely conjectural. It seems probable that a burst tire or tires was the root of the trouble, and it is not entirely uncertain that the excitement under which Arents appeared to labor throughout the race was a factor in the case. How he ran into the curb at the Hempstead control, burst a tire and spilled his chauffeur has already been told. There is also in evidence an affidavit made by an attache of the Continental tire station at Hempstead, that on the fatal lap Arents arrived at that point with a flat tire, which the Continental men replaced. The affidavit recites that the connecting hose of the pressure tank burst, hearing which Arents and Menzel mistakenly conceived it to be the inner tube that had exploded; they waved the tire repairers aside, pulled off the good tire and put on another one themselves. Both men were all excitement, and so very anxious to make off that they did not wait to have the lugs properly tightened.

HEARD TWO TERRIFIC EXPLOSIONS.

One of the motor bicycle checkers a short distance outside Hempstead testified that he saw Arents stop in sight of his station and almost immediately make off. E. W. Wyatt, captain of the Alpha Motorcycle Club, who was also one of the checkers, located nearer Queens, appears to have been the official nearest the accident. It occurred just around a turn of the road where he was stationed. He states that the first suspicion of trouble that he had was the sound of two terrific explosions. He immediately ran to the scene and found the car overturned in the middle of the road, and pointing in an opposite direction from that in which it had been moving. Leaving the work of rescue to others, he at once repaired to the nearest telephone booth and called the ambulance. According to Wyatt, both rear tires were off, one of them, at least, being blown to bits. The lip of one of the rims was almost worn away, indicating that it had dragged tireless on the road for a considerable distance, bearing out what some of those at Hempstead claimed to have been the case, i. e., that Arents left Hempstead with one wheel minus a tire. These surrounding circumstances make it appear most probable that as Arents rounded the bend in the road and his tire or tires exploded, a wheel collapsed and he jammed on the brakes and caused the upset.

SPECTATORS SOUGHT GREWSOME SOUVENIRS.

When the crowd gathered at the scene of the accident the car still lay in the centre of the road, where a following car had difficulty in passing. So, after the two men were on their way to the hospital, a score of willing hands lifted it up and rolled it over and over, across the trolley track and up a four foot bank into a field. Souvenir hunters were soon at work, securing bits of wood and metal, to carry home as mementoes of the grewsome tragedy. All through the morning people along the course were on the lookout for stray souvenirs, and their richest find was in the shape of bits of tires that were discarded or blown off.

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At the Turn in Queens.

That there was not a slaughter of the ignorant at the Queens end of the course partakes of the marvellous. If some of the silly motorphobes, who have been belaboring the Nassau County supervisors for "depriving the owners of the roads of their use" could have seen the way the populace literally swarmed over it at their own free will and pleasure on Saturday, they would have recanted—perhaps. For if there ever was an injunction disregarded and made farcical it was that laid on the people to "venture on the course at your own peril." In the first place, as all those really posted knew, there was no closing of the road to its habitual users; such prohibition would have been clearly illegal. All that was done was to request the people to keep off the roads. This request was utterly disregarded. For nearly a mile on the Hempstead road, an equal or greater distance on the Jericho road, and the few hundred yards of connecting highway at Queens, the racers drove between living, elastic walls, which opened just sufficiently to clear the oiled stretch of road and closed automatically immediately the car had passed. It seemed like sheer bravado; in reality it was ignorance, with a touch of American indifference and recklessness.

That the crowds were not decimated at some points was due to a variety of circumstances, among which luck played no small part. The drivers of the flying cars guided them straight and true, swerving neither to the right nor the left; the system of signalling was finely conceived and splendidly executed, so that ample warning was given of the coming of each car; and, lastly, the people had sufficient gumption to move quickly once the signal to clear the road was given. This happy combination of circumstances eliminated casualties; but there were occasions where it was touch and go, and where only by the hardest kind of work was the way cleared by the police.

POLICE HAD STRENUOUS MORNING.

The latter had their hands full. They passed a strenuous morning, and looked the worse for wear at the finish. At each of the Queens turns were stationed two mounted officers and half a dozen policemen on foot. When an oncoming car was signalled they began their endeavors to get the crowd back. With voice and strong arms they labored, always successfully, but often barely so. From 10 to 1 o'clock people came in droves—the majority of them city folks, but a number from the countryside. The former came in trolley cars, on foot and a few in automobiles; the latter in teams and on foot. They massed on the turns, sizing up the situation and then distributed themselves along the road.

The first turn at Queens was worse than its mate. It was a right angled turn, with the travelled road hugging the sidewalk closely and coming perilously close to a telegraph pole. On the outside of the curve several



ONE OF THE TELEPHONES.

wagon loads of sand had been dumped and spread over the turn so as to form a rude sort of banking. It was rarely needed, however, as the drivers had a wholesome respect for the turn and slowed down sufficiently to take the turn without trouble. In reply to the question whether all the racers took it so slowly, one of the policemen replied:

"All of them except Gabriel. Sure, he is the devil himself. He flies around here on two wheels and is gone before you can see him."

At the second turn the men pursued somewhat different tactics. They slowed before reaching the turn, swung wide, then quickened their speed and shot around very rapidly, opening wide the throttle as soon as they straightened out.

WHERE THE RAILROAD CROSSED.

Between the two turns, and much nearer the second one, the Long Island Railroad crosses the road at grade. The road is slightly depressed here, and the racing cars dipped down and shot up the next rise at a tremendous pace. The system of signalling at this point, as elsewhere, was beyond praise. At the first turn, already referred to, a man with a white flag was stationed; it was his duty to signal the approach of a car along the Hempstead road, and the signal was taken up by a man stationed midway between the first turn and the railroad. At the latter point were stationed two men, one having a white and a red and white flag to signal the oncoming car, the other, a railroad employe, having the familiar red and white bits of bunting with which he signalled the railroad trains.

The precautions taken to avoid a catastrophe were made plain at a little before 12 o'clock. An eastbound passenger train had stopped at Queens station and was ready to proceed to the next stopping place. The bell clanged and the big driving wheels of the locomotive began to revolve.

"STOP YOUR TRAIN!"

"Wait! A car is coming!" cried the signalman of the American Automobile Association to the railroad signalman. "Stop your train."

The red flag was waved at the train, which came to such a sudden stop that it brought passengers' heads out of the windows to see what was the matter. Meanwhile the A. A. A. signalman waved his red and white flag to show that the track was not clear; then, as soon as the train had come to a stop he substituted the white flag, and this clear signal was repeated by the signalman between the railroad and the turn and taken up by the man at the turn itself. In an instant the road was filled with waving white flags, through which a flying car sped rapidly. A second and a third car crossed the railroad before the stalled train was permitted to proceed.

The railroad men took a deep interest in the race. One of those employed around the station called to the operator in the signal tower, who was dividing his time between signalling trains and watching the space devourers:

"How many do you make it are still running?" to which the tower man responded:

"I make it five. Is that what you have it?" Receiving an affirmative reply, he turned again to his work.

Over in the Continental depot, a few yards from the railroad, interest was still taken in the race after the Mercedes cars were all out. First place was certain to go to a car with a French tire, but it was the Clement that was favored. At this station there were pails of water containing cloths to be applied to heated tires, but no cars stopped there to make use of them.

At 12 o'clock the crowd had become enormous. It was apparent then that the race lay between Heath and Clement, and both men were cheered as they passed. The popular favor was with Heath, however, and he received salvos of applause.

On each of two of the corners of the second Queens turn there were churches. On trees in front of them were big placards in red letters reading: "Dangerous; keep off the turns." They might just as well never have been printed. Scores of people walked in the road, hundreds of others lined the turn and sat on the lawns in front of the churches. As each car went by there was a rush to see it, and it was as much as the policemen could do to open a fifteen or eighteen foot pathway for them. It was a good natured, heedless crowd, out for a holiday and bent on enjoying itself. That the middle of the road must be kept clear was recognized; but that there was any danger from the swerving of an unmanageable car did not seem to enter people's heads. By great good fortune no car got from under control, so this belief was not shaken.

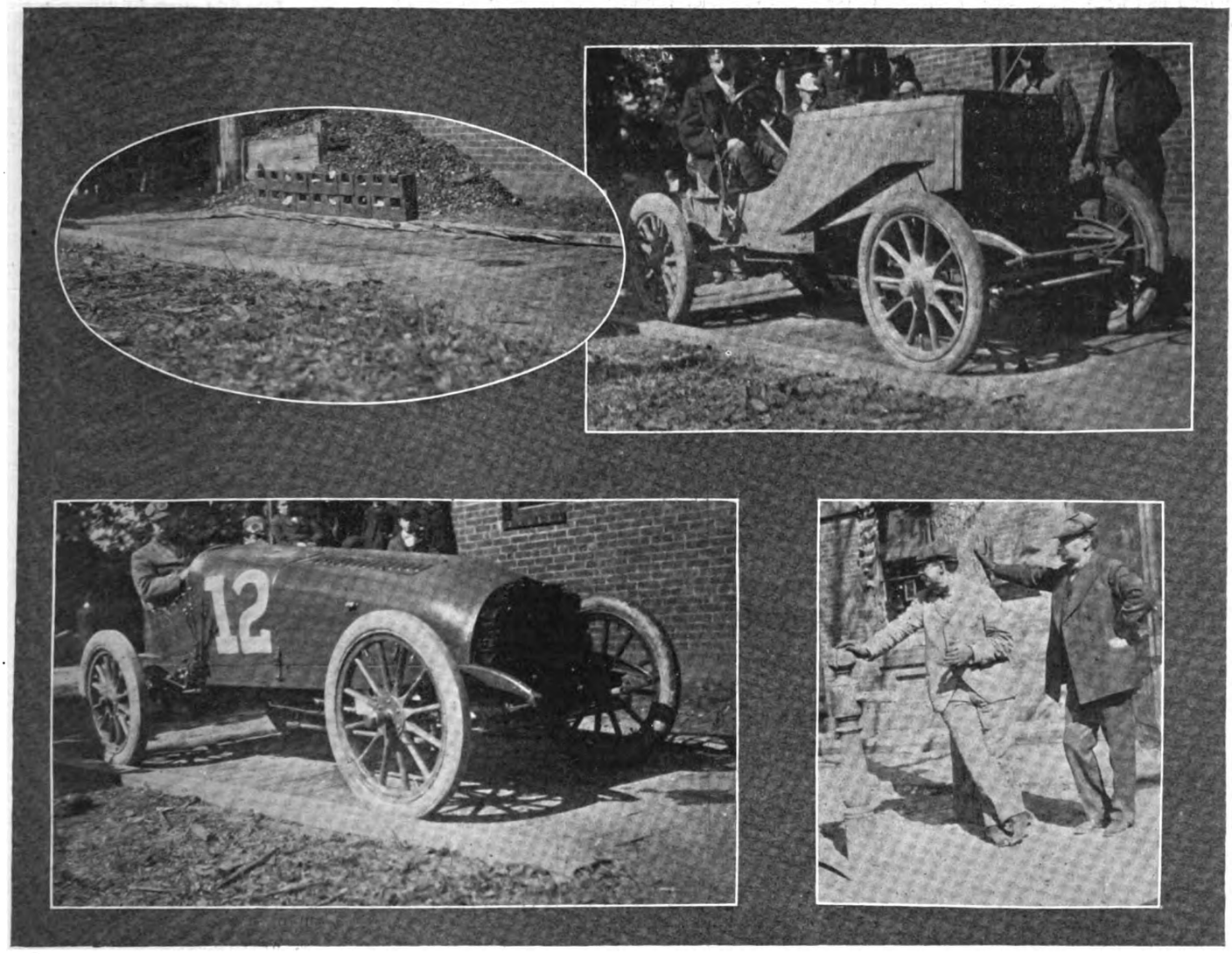
"IN THE AIR" AT QUEENS.

Upon leaving Queens and entering the Jericho road a pretty good imitation of the "rocky road to Dublin" was encountered, minus the rocks. For about one mile this highway is within the limits of Greater New York, and, like most city roads, it presents an unpleasant contrast to the smoother and

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THE SCALES IN THE COAL YARD.

HEATH ON THE SCALES.



CLEMENT "WEIGHING IN."

WEIGHERS RIKER AND BIRDSALL.

better kept highways of Nassau County. This particular piece of road was utterly unfit for the excessive speeding that was done on it. In places it was in waves; again there were holes and hillocks; over these the cars, pushed to the extreme limit of safety and sometimes beyond it, fairly bounded, touching only the high spots. As Joseph Tracy put it, the cars "were in the air most of the time"; when they came down it took sound construction and strong springs to withstand the shock; and driver and chauffeurs alike were required to hold on like grim death itself to escape being jolted out. The wonder is not that springs were broken and so much other damage inflicted, but that any of the cars emerged scathless from the terrible ordeal.

It was on this stretch that Heath had his tire trouble which so nearly put him out of the race. The 60 horsepower Pope-Toledo was also put out here. The driver, A. C. Webb, had put on speed upon leaving Queens, when his car bounded from one hummock to another until he realized that his control of the steering was gone. Mindful of the danger of jamming the brakes on suddenly, he applied them gently in hope of stopping. Finding that he was heading straight for a tree, however, he jammed on the emergency brake; the car skidded, struck the tree and went into a ditch. The mecanicien jumped, and Webb landed, catlike, on all fours. The car was badly damaged, but the men were unhurt.

RUMPUSES AT THE WEIGHINGS.

Young Clement made things interesting at both the "weighing in" on Friday and the "weighing out" immediately after the race.

The scales were located in a Garden City coal yard, and several days before the weighing James L. Breeze, of the Cup commission, found that they were the typical coal man's scale. They weighed 28 pounds over in the thousand. As a result they were officially adjusted and the beam set at the weight limit of the cars—1,000 kilograms, or 2,204 pounds. When Heath and Clement learned on Friday that it was the intention to take their cars from them and keep them under lock and key overnight, there was a mighty protest. Heath said decidedly that he would not submit to the rule, which had been adopted a week previous. He did not purpose permitting his car to leave his possession. He would pack up and go home first. Clement said the same thing, but took many more words to say it, and lashed himself into a great state of excitement. The official measurers, A. L. Riker and E. T. Birdsall, had no voice in the matter, but finally carried the matter to the race authorities. Heath and Clement refused to recede from their decision and protested against the imposition of a rule of which they knew nothing. A compromise was effected by the adoption of a "weighing out" rule. The finishers were required to present their cars after the race for weighing.

The actual operation of weighing in was marked by one other incident. A cute young American who doubted the weight of his car removed its reversing gears, and when Mr. Riker ordered him to reverse was considerably embarrassed and stammered a very lame excuse.

The weight of each car was not taken. Each

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in turn was run on the scale, the beam of which had been set to 2,204 pounds. If the beam was not depressed it was evident that all were within the limit, as proved the case.

At the weighing out, of course, only Heath and Clement presented themselves. Heath conducted himself like a quiet and dignified gentleman. Clement acted like a schoolboy or a hen with its head off. When Heath's car was on the scale he demanded to see its exact weight. Measurer Riker had passed it as O. K. and had verified the seals that had been placed on the several parts at the weighing in, but the excitable little Frenchman and his jabbering retinue were not content. They prattled like a lot of parrots with high-speed tongues. Riker's face was livid with rage that his word should be doubted. If he had presented one or more of the excited Frenchmen with an uppercut on the chin or given them a jab in the stomach none would have been surprised. He contained himself, however, and finally called on Chairman Pardington, who refused to interfere. The Niagara of French and the waving of arms were then resumed with redoubled energy. But Riker held to his position, and Clement was still jabbering like a crazy man when he left the spot. Incidentally, Clement's car was not "weighed out" at all.

THE OFFICIALS OF THE RACE.

These were the officials of the course:

Referee—W. K. Vanderbilt, jr.

Judges of start and finish—Harlan Whipple, president A. A. A.; Frank G. Webb, president L. I. A. C.; Winthrop E. Scarritt, president A. C. of A.; W. C. Temple, president P. A. C.

Judges of control—Hicksville control, G. Von Wagner, jr., and Peter Grupe, Hempstead control, H. C. Hackstaff and John D. Hackstaff, jr.

Judges of turns—Jericho, William Milne; Plainedge, Theodore Heilbron; Queens-Hempstead, R. Healy; Queens-Jericho, Frank L. Evans.

Judges of weighing in—E. T. Birdsall, A. L. Riker.

Timer—S. M. Butler, A. C. of A.

Starter—C. H. Gillette, secretary A. A. A.

Assistants to starter—George E. Farrington, A. C. N. J.; Emerson Brooks, A. C. A.; M. M. Belding, jr., A. C. A., Robert Lee Marshall, A. C. A.

SOCIETY PRESENT IN FORCE.

Officialdom and society were both well represented in the grandstand and along the course. Mayor McClellan was present, driving down in an automobile, accompanied by Commissioner of Street Cleaning Woodbury. His Honor watched the race for some time, and seemed to take a keen interest in it. Later in the day he was entertained by Mr. and Mrs. Egerton Winthrop, jr., the Mayor being Mrs. Winthrop's brother-in-law. President Harlan W. Whipple of the American Automobile Association and President Winthrop E. Scarritt of the Automobile Club of America both had parties of friends at the course.

In the person of "Willie" K. Vanderbilt, jr., donor of the cup and the one chiefly instrumental in promoting the race, the official—he was, of course, referee—and the social luminary were joined. He was here, there and everywhere, the observed of all observers. Sartorially he was a marvel; his rapid changes of garb will linger long in the minds of those who witnessed them. In Mrs. "Willie K." the cup donor had an able and willing coadjutor. No person present took greater delight in the proceedings than she, or evinced her pleasure in more vociferous fashion. Her head, crowned with a red picture hat, and her face, flushed with excitement, she was the most lively person in the grandstand. She led the cheering and the handclapping—when there was any. When Heath flashed by at the finish she jumped up on a camp chair and waved her hands rapturously.

Of the other society people, the Long Island colony—and the Meadow Brook set in particular—were most numerous. The races at Morris Park, the horse shows at Tuxedo and Morristown and other social functions prevented many people from attending. In the boxes and stands were such well known automobile enthusiasts as Colonel John J. Astor, who arrived late; Mr. and Mrs. O. H. P. Belmont, who had a large house party at their residence and entertained them at a function which broke up at daylight, so as to give them time to get over to the start; Mr. and Mrs. Harry Payne Whitney, Mr. and Mrs. Victor Sorchon, Mr. and Mrs. Sidney Dillon Ripley, James L. Breese, Mr. and Mrs. Foxhall Keene, and Alfred G. and Harold Vanderbilt. Many of these people never left their seats from just after daylight until the race was finished. In a number of cases servants served refreshments in the shape of coffee and sandwiches at about 9 or 10 o'clock in the morning; and such people as Mrs. W. K. Vanderbilt, jr., Mrs. O. H. P. Belmont and Mrs. Herman Oelrichs nibbled and drank unceremoniously between cars. Wet goods—bottled beers, whiskies, etc.—were also passed around in the early morning to keep the cold out.

THE TRADE WELL REPRESENTED.

Thomas B. Jeffery and George W. Bennett, of T. B. Jeffery & Co.; M. J. Budlong and F. C. Armstrong, Electric Vehicle Co.; George H. Day; R. D. Chapin, Olds Motor Works; Harold O. Smith and President Prenner, Premier Motor Mfg. Co.; Bert York, B. F. Goodrich Co.; Wm. E. Metzger, Cadillac Automobile Co.; Henry Ford, of Ford Motor Co.; Arthur Philip, Morgan & Wright; D. J. Post, Veeder Mfg. Co.; E. E. and Edgar Apperson; L. A. Hopkins, Brooklyn Automobile Co.; Harry G. Fisk, Fisk Rubber Co.; President Shirmer, J. A. McCrea and Archie McLachlan, Royal Motor Car Co.; W. S. Gorton, Standard Welding Co.; L. P. Kittredge and L. P. Mooers, Peerless Motor Car Co.; W. A. Gray and F. E. Castle, of Gray & Davis; L. J. Keck, Badger Brass Mfg. Co.; George Worthington, jr., and W. J. P. Moore, Worthington Automobile Co.; Walter and Harry Allen and Mr. Halle, Allen, Halle & Co.; F. A. La Roche and A. J. Picard, Am. Darracq Automobile Co.; George Weiss, of Cleveland Car Specialty Co.; S. T. Davis, A. L. Riker, the Locomobile Co. of America; W. B. Miller, O. J. Woodard and P. Bradley, of Diamond Rubber Co.; Windsor T. White and Rollin White, White S. M. Co.; M. L. Goss, of Baker M. V. Co.; Orlando F. Weber, of Chicago; Arthur Pope, A. L. Pope, jr., and Charles E. Walker, Pope. Mfg. Co.; A. H. Funke; Arthur Hyde, Whitlock Coil Pipe Co.; Percy Owen, Winton Co.; S. D. Waldron, sales manager, Packard Motor Car Co., Detroit; J. S. Bretz, Corbin Motor Vehicle Corp., New Britain, Conn.; E. R. Thomas, president, E. R. Thomas Motor Co., Buffalo; J. D. Anderson, vice-president, Hartford Rubber Works Co., Hartford; H. A. Githens, G & J Tire Co., Indianapolis; A. E. Schaaf, Pope Motor Car Co., Toledo; L. B. Gaylor, general manager, Waltham Manufacturing Co., Waltham, Mass.; Charles E. Miller, New York; H. A. Lozier, jr., Lozier Motor Co., New York; J. W. Bowman, sales manager, Fisk Rubber Co., Chicopee Falls, Mass.; H. P. Maxim, Electric Vehicle Co., Hartford, Conn.; Henry Souther, Hartford, Conn., and John C. Spiers, general manager, Autocar Co., Ardmore, Pa.; Harry Fosdick, Boston; George H. Lowe, Boston; C. E. Whitney, Hartford.

ABOUT HEATH, THE WINNER.

George Heath, the winner of the race, is a man of means who has been an enthusiastic automobilist since motor vehicles were introduced. He gained distinction this summer by winning the Circuit Ardennes of France, a road race of 375 miles, without a stop. Clement finished third in this race.

In an interview after the contest Heath, who is a strapping man a little more than six feet in height, with the droop of an Englishman, said that this race, despite the many turns, was not so trying as the Circuit Ardennes, because the two controls and ten laps gave a driver twenty chances to rest.

He explained the fast time as due to the absence of hills, but said the course was not so good as those of France. He also said that he did not run at full speed all the times he could have, from fear of killing some one, but let out when on the last lap, because he heard at a control that Clement's time was better than his. Mr. Heath was born in Astoria, L. I., forty-two years ago. When asked how long he had lived abroad he answered:

"I am ashamed to say that it is fifteen years."

While driving the car the only sustenance he had was a few raw eggs eaten in the controls. Save two tire troubles, his car sustained only a broken spring. He said he rather expected to break all of them.

Albert Clement is only twenty-one years of age, and his only other performance of note was winning third place in the Circuit Ardennes. His father is the well known manufacturer of the Clement-Bayard cars, one of which the son used.

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Columbia Crew Cracks Chicago-New York Record by more than 14 Hours.

ARRIVAL AT THIRTY-NINTH STREET, NEW YORK.



CROSSING THE HUDSON ON THE WEEHAWKEN FERRY.

As was predicted in last week's Motor World, the Columbia car is once more the holder of the Chicago-New York record. The much coveted distinction was won on Thursday, October 6, when Bert Holcomb, driving the 30-35 horsepower Columbia car, reached Weehawken at 1:35 p. m., and the store of the Electric Vehicle Co., Thirty-ninth street, New York, ten minutes later, making his elapsed time 58 hours and 35 minutes at Weehawken and 58 hours and 45 minutes at New York. These figures replace those made last August by Ellis and Schmit, viz., 72 hours and 46 minutes.

The record breaking journey was signally successful. It was carried through almost exactly as planned, the schedule laid out being followed with remarkable fidelity, with the finish coming a little more than an hour ahead of the sixty hours called for. But for several times straying from the road owing to bad piloting, thereby losing a lot of valuable time, the record would have been still further cut. The big slice carved out of it last week seems destined to preserve it from further attack for this season at least.

The 1,108 miles between Chicago and New York—as shown by odometer measurement—was covered by Betsy II, as the car was dubbed by its crews, without engine or other constructional troubles of any kind, save those connected with tires. Three punctures and one cover replacement, necessitated by its being cut by a stone, constituted the sum total of these. The repairs were quickly made, the new Dunlop detachable tire, which was used, proving itself susceptible of very rapid manipulation. From twelve to fifteen minutes was all that was necessary to take out the inner tube, insert a spare one, replace the cover and inflate. In addition to the slight delays from this cause there was a delay of an hour and five minutes in Buffalo, and three hours were lost between Cleveland and Binghamton through straying from the road. The actual running time was 51 hours and 5 minutes, an average of 21 2-3 miles an hour.

The start was made from the Chicago Automobile Club house at 2 a. m. on Tuesday, October 4. The route lay through South Bend, Cleveland, Buffalo, Elmira, Binghamton, Kingston and Weehawken. Two entire nights and part of a third were consumed in the running, the car being driven through day and night. The driving was divided into four stages, and three crews took turns at them. Holcomb began the journey, and covered the stage from Chicago to Cleveland, a distance of 382½ miles, which was covered in 15 hours and 35 minutes; then Lawrence Duffie took the wheel, and did not relinquish it until Buffalo, 208 miles further, was reached, this run being made in 11 hours; at Buffalo (his home city) "Eddie" Bald took charge, and got the car to Binghamton, 225 miles, in 19 hours and 32 minutes; here Holcomb again assumed control, and brought the car to Weehawken, 265 miles, in 16 hours and 45 minutes.

The fastest run of the trip was made from Chicago to South Bend, Ind., a distance of 110 miles. This was covered in 3 hours and 35 minutes, an average of more than 32 miles an hour. The car was travelling faster than this, in spite of its being pitch dark, but when thirty-two miles out of Chicago Holcomb, who was worn out by worry and loss of sleep owing to the unsuccessful attempt of the day before, dozed, and before he could recover himself ran the car into a ditch. No injury was done, however, and

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the car was driven out to the road and the journey resumed. That he did not lose any time, however, is proved by the fact that he averaged 24 miles an hour to Cleveland.

The record breakers were favored with good weather for the greater part of the distance, and but for sand between Cleveland and Buffalo would have called the roads good. Upon reaching Binghamton, N. Y., heavy rains were encountered, which made the roads heavy and slippery. The fact that this stage was taken at night added to the difficulty of covering it. By the time Newburg was reached the rain had ceased and the roads began to dry. Before Weehawken was reached they were in good condition.

It was just 1:35 p. m. on Thursday, 58 hours and 35 minutes after leaving Chicago, that the car driven by Holcomb drove up to the ferry slip at Weehawken, where a special boat was in waiting. A car containing Manager Armstrong of the Electric Vehicle Co.'s New York branch and other Electric Vehicle officials, and also a Motor World man, had been driven to Weehawken to meet the voyagers. It proceeded several miles up the road, and had stopped at a roadhouse to telephone for news of the car when suddenly the latter hove quickly in sight and was gone in a flash. There was a hurried scramble into the waiting car, which set out in hot pursuit, and the ferry slip was reached just before the lines were cast off. A quick passage across the river was made, and Thirty-ninth street reached ten minutes after leaving Weehawken.

Holcomb and Duffie are old hands at the record breaking game. They piloted the 24 horsepower Columbia car from Chicago to New York in September, 1903, when the distance was made in 76 hours. This was cut to 72 hours and 46 minutes in August last by Ellis and Schmit.

The car used on the present trip was a 30-35 horsepower four cylinder Columbia car, fitted with the new American Dunlop tire. A Whitlock cooler was fitted, and worked splendidly throughout the run. The same is true of the Whitney chains, with which the car was equipped.

After the completion of the run a dinner was given to the participants and a number of guests by the Electric Vehicle Co.

To Check a Car on a Hill.

If for any reason a motorist should miss his gear or stop his engine in ascending a hill, and his brakes refuse to hold him from running backward, his best plan is to steer to the near side of the road, holding the brakes as hard as he can, then, if the momentum of the car is not too great, bring the rear of the car right round in the road so that it faces uphill. Even if the road is not wide enough to make the complete turn, his car will be stopped by running backward ito the fence, and no great damage will be done.

Looking After the Ninety-nine.

City Auditor Noble, of Columbus, Ohio, has issued 227 automobile licenses. It is estimated that there are 99 more automobile owners who have not registered.

KANSAS CITY'S POOR SPORT

Small Attendance, Squabble and Cold Weather Combine to Hurt Race Meet.

The six hundred spectators who journeyed to the Kansas City (Mo.) Driving Park on October 5 to witness an automobile meet came away with only a half pleasant impression of the sport. There was one good contest—that between Webb Jay (White) and Will Goodrich, the local crack, who drove a Ford, in which the latter came out first best. These two drivers accounted for nearly all the prizes given. In the motorcycle race the men refused to start until they saw the prizes; in the end a compromise was reached, and the promoter deposited $25 as a guarantee that they would be forthcoming.

Webb Jay, the only out of town driver to attend, and who won three races with a regular White stock car, drove with an ease which astonished the spectators. He "seldom had more than one hand on the steering wheel, and seemed to spurt at will." The five hundred spectators got cold between the races, and the most faithful were restrained from leaving only by the comfortable picture of Jay sitting on the warm boiler of a White with steam curling about him. Summary:

Five miles, for vehicles from 881 to 1,432 pounds—Webb Jay (10 horsepower White), first; E. P. Moriarty (7 horsepower Stevens-Duryea), second; Will Goodrich (10 horsepower Ford), third. Time, 9:40.

Three miles, for vehicles from 1,432 to 2,204 pounds—Webb Jay (White), first; D. L. Whitford (10 horsepower Franklin), second; Ralph Baker (White), third. Time, 5:43 1-5.

Five miles, for motorcycles—Charles Dinklege (1½ horsepower Indian), first; A. O. Brooks (Indian), second; Walter Lindell (3 horsepower Marsh), third. Time, 8:32½.

Three miles, free for all—Will Goodrich (Ford), first; Webb Jay (White), second; D. L. Whitford (Franklin), third. Time, 8:50.

Three miles, for vehicles from 881 to 1,432 pounds—Will Goodrich (Ford), first; Webb Jay (White), second; D. L. Whitford (Franklin), third.

Three miles, for motorcycles—C. C. Hahn (Indian), first; Charles Dinklege (Indian), second; Walter Lindell (Marsh), third. Time, 5:10.

Five miles, match race between Webb Jay and Will Goodrich—Won by Jay (White); Goodrich (Ford), second. Time, 9:11.

A. C. A. Reception to Foreign Cracks.

Of the foreign racing men, in whose honor the function was held, Albert Clement alone was present at the smoking concert given by the Automobile Club of America at their clubrooms in this city on Tuesday night. George Heath, the winner of the Vanderbilt Cup, had sailed that morning on the Kaiser Wilhelm der Grosse, while Gabriel, Teste and Tart were engaged in sightseeing prior to their departure for France the next day. The presence of Clement, Frank Croker, E. E. Hawley, H. H. Lyttle and A. C. Webb, however, gave the affair a distinctive race flavor, each of those mentioned being heartily cheered.

President W. E. Scarritt opened the proceedings with one of his characteristic speeches, in which, after deploring the public clamor against automobiles, he launched into one of his eloquent flights eulogistic of the self-propelled vehicle. Continuing, he dropped some hints concerning the 1905 Vanderbilt race, which he seemed to regard as a certainty, and intimated that it would again be run on Long Island roads. He made light of the obstacles which were put in the way of this year's contest, saying it was beneficial in the same way that "a few fleas are good for a dog, to make him active."

Clarence Gray Dinsmore, the club's foreign representative and a great patron of road racing by proxy, spoke, commending American cars, which, he said, had made an excellent record for reliability, if not for speed, in the cup competition. He hoped American manufacturers would feel sufficiently encouraged to build cars for the next international cup race in Europe.

He then told of the great preparations being made by Germany to regain the international cup. For the first time, he said, the Mercedes makers are building special racing machines for the event, and he predicted that all former speed records would be smashed by them.

After a few more speeches, the entertainment proper, consisting of a smoking concert, with monologues, and supper, was inaugurated. There were about seventy-five members and their friends present.

Price Handicap Brighton's Feature.

A handicap race with the starts allotted entirely on price will be a novel feature of the forthcoming race meet to be held on the Brighton Beach track, this city, on October 22. The event is open to all cars selling at $1,000 or less, and a car will be given a yard handicap for each dollar that is costs less than the $1,000. Cars that sell for $1,000 will be on scratch, while an $800 machine will be given 200 yards start. The distance will be a mile.

Among the other events is a mile dash for touring cars for the Coney Island Cup, in which each car will be required to carry three passengers, and the operator must crank the machine after the word "Go!" is given; a two-mile race for the Amateur Championship Cup; a free-for-all event, in which cars must be driven by their owners; the International Cup race, with heats at three miles and a five-mile handicap, open to all.

St. Louis Buys Vehicle Licenses.

Contracts have been let by the St. Louis (Mo.) officials for 64,000 vehicle license plates, to cost $2,426.50. They are divided as folows: 1,500 automobile plates, 5,000 bicycle plates, 25,000 dog plates and 12,000 one-horse wagon plates.

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A COACHMAKER AS CRITIC

Britisher Discusses the Automobile and Finds Many Things That Displease Him.

Notwithstanding their early aloofness, carriage makers are watching the automobile industry with increasing attention. This is only natural, in view of the fact that, up to the coming of the automobile, they virtually controlled the manufacture of road vehicles. The experience of centuries has placed them in a unique position with respect to constructional details. Consequently any criticism of the automobile as a road vehicle, aside from its driving mechanism, is both timely and interesting. Such criticism is contained in a paper read before the Congress of the Institute of British Carriage Manufacturers recently by J. Boarland, excerpts from which follow:

"The best horse drawn vehicles have been produced, but the people want to go faster, unfettered by rail tracks or tramways. The motor car has come to stop because it goes faster than horses, and humanity desires to go faster. There will, perhaps, be a great many horsedrawn carriages used in the future; some may be displaced by the motor car, but the number of drawn and propelled vehicles owned by those whom we call carriage people is likely to remain the same, and in addition, there will be the probable demand for the middle classes, who are likely to find something within the reach of their income. There is nothing to alarm the coach maker in this evolution, except he has a rooted conviction that the world is at a standstill. There is money in it, and coach makers can cater for it. We have centuries of experience and good taste to help us, and it only remains for us to study how to keep our own work in our own hands.

"We have instinctively copied the parabolic curves of the most graceful of animals. Coach makers have for generations kept to this ideal. Only once did they depart from it, when some ingenious vandal (probably thinking to cheapen production) discarded sweeps and substituted straight lines. The straight line craze caught on, until it was found that other wood workers, with half the coach maker's experience and none of his good taste, could bolt together a number of straight pieces of wood into the form of a box, mount it upon elliptic springs and call it a dog cart. This was utility without beauty, and in a few years we had lowered the public desire for good design. The railway carriages on most lines furnish an example of utility without beauty. The production of the motor car is largely a question of design. The engineer's draughtsman is ready to produce something made up of straight lines and circles. He frames his work strictly in accordance with the parallelogram of forces with a few arcs of circles thrown in. He can construct a frame upon which sheets of metal may be placed, and strips of wood nailed on the latter for mouldings. Stresses are his first consideration, gracefulness comes second.

"The present time may be considered the iron age of the motor car. Coach makers have been familiar for years with the suggestion to substitute various metals instead of wood for panels. The idea has been condemned again and again, only to be reiterated by some one else, and in connection with this new industry it has actually taken shape, and we have not only metal panels, but in some cases metal frames also. The reasons for condemning panels of this description are many. The thin metal shows the battens which are inserted in the frame to give rotundity of appearance. They are easily bent or buckled. In the case of sheet iron, they rust through under the trimming, and they add to the vibration of the car. With mild mahogany panels the shape can be neatly rounded and the battens are not seen through them. When properly filled up they give a good foundation for highly finished coach painting. They are stronger than metal panels. The difference in weight between mahogany and sheet iron is trifling. Panels may be shaped in mahogany to such designs as would require templets in the case of metal, and instead of being planted on strips of wood tacked on for mouldings, showing all the nail heads, proper English ash framing can be made without nail heads to be an eyesore, and with very few joints visible. The wings of a motor car when made of sheet iron are noisy; not even the raised border milled round them stops the drumming sound. The same material should be employed in motor bodies as coach bodies are made from, viz., wood, and I will be glad to hear what the exponents of metal panels have to say in their favor. I believe that the best way to make a carriage perfect is to try to remedy its defects. In this paper I will only point out a few defects, but will not suggest remedies. We will begin at the back of the car, and the door of the tonneau must be voted a nuisance when it does not shut properly. How many coach makers in this institute would dream of sending out a wagonette with a door which would shut so badly as that of the ordinary armor plated tonneau motor body? The coach maker who does not forsake the principles of construction used in his trade can make a body the doors of which will open and shut properly. The dash, upon which the bonnet hinges, is often an inferior piece of wood, utterly unfit to carry the number of articles which are bolted upon it, and soon succumbs to the heat from the engine. The steps are poor and badly placed. The engineer takes upon himself the selection and the placing of the steps upon the frame, with the result that they are similar in design and general inconvenience to those upon a locomotive engine. The coach maker has spent many hours of his working life in spacing the height from the ground to the bodies of the carriages which he builds, in considering the proper size and shape of the treads, in booting them and in rendering them safe, so that the carriage user may enter and (what is equally important) may alight in safety, whether in the day or night.

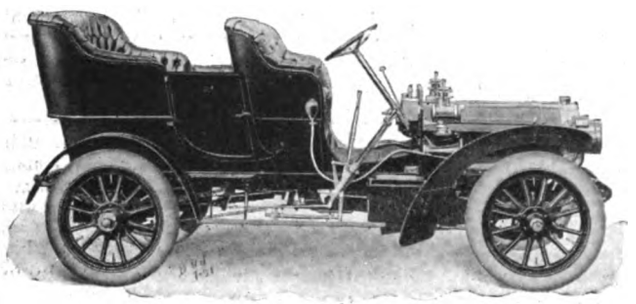
"The bucket seat has its advantages. It separates the servant from the owner of the car, and it gives support to the sides of the occupant, as well as to his back. The angle of inclination may be right for a car running at thirty miles an hour, and for fast touring cars perhaps it is best, but for the smaller cars and for such persons as do not care to go fast, I am inclined to think that the strained, anxious looking forward position hardly gives that idea of comfort which one is likely to associate with people who are enjoying their ease and the scenery at the same time. The canopy of the touring car may be made dainty or clumsy, according to the taste of the builder. The curtains, which are hung on rings sliding upon a rod attached to and under the roof, and which are gathered round the standards and tied much after the style of a cotton umbrella, may be effectual in keeping out the storm, but I must intrude my personal opinion and state that they do not look smart. The curtains which are cut to the rounded shape of the car and are made to hang without wrinkles give the canopy a more dignified appearance. The sliding wind shield perhaps gives the coach maker most trouble. After he has made it to work properly and fitted so that it will not rattle either when down or under the roof, he finds that the dainty French fasteners which keep it in position are badly fitted in themselves, and make noises when the car is running. Might I appeal to those members who belong to one of the accessory trades to produce a fastener which will not rattle; something which may be turned with the wrist and not with the thumb and finger?

"With regard to the trimming and painting very little can be said, because the taste of the purchaser has to be consulted. Personally, I think that in a climate where from October till April the sun is but an inconstant visitor, bright warm colors are preferable to deep cold shades. Human nature is paradoxical, for we see the carriage users who in times gone by complained of the slightest noise in their carriages now taking no notice of such things when driving in motor cars. Motoring is new, but when the novelty has somewhat worn off it is not improbable that noisy doors and windows, and the various things which were found fault with in horse drawn carriages will be commented upon by the users of motor cars. When that time comes some of the attention which is now centred upon the engine will be diverted to the body, and a good body will be considered as essential to a motor car as a good engine now is. To sum up, the British coach maker in building motor bodies should keep to his old ideals of good workmanship and graceful designs, of utility coupled with beauty. He should model them on the shapes used so long in horse drawn carriages and build them of similar materials."

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Toledo Club Has a Joke Map.

Members of the Toledo Automobile Club are having considerable fun at the expense of the committee that was appointed some time ago to furnish road maps of the country adjacent to Toledo.

It appears that the committee engaged an engineer to do the work, and the latter charted the map from a government survey that was anything but accurate, the result being that there are a number of roads on the map that do not in reality exist at all. Besides this, some of the roads that are charted "lead to nowhere" and are nothing but blind lanes.

The other day one of the members of the club bravely started out, confident in his ability to penetrate all the recesses of the country, for he had one of the maps securely tucked away in an inner pocket.

After he had got some distance from Toledo he pulled out his map, so it is said, and decided to take a certain road that was marked therein and which was supposed to lead him to Stony Ridge. He had not proceeded far when the highway began to assume all the aspects of a lane, and the traveller, almost before he knew it, was brought up into a farmer's barnyard. Another member of the club followed one of these "roads" for some distance, only to find himself in a field surrounded by cows.

The maps cost the club somewhere in the neighborhood of $200, and some of the members are wondering whether it is really a joke, after all.

Side Entrances for Short Chassis.

The question of mounting body work on short "chassis" in such a manner that side entrances are possible, has been occupying the attention of most of the leading Paris coachbuilders. The long frame has been found so unwieldy in crowded thoroughfares, so awkward at taking corners, and to some people, so expensive, that there has been almost a unanimous demand for some style of body capable of being mounted on the ordinary short "chassis," and yet at the same time permitting the introduction of the now essential side entrances.

To solve the promlem, the Paris firm of Kellner has devised an appliance, which it is about to introduce. It is an extensive modification of the old "siege tournant," and the first is being fitted to Frank Munsey's 18-horsepower Mercedes. In order to obtain access to the rear part of the vehicle, it is only necessary to open a small side door. This, in opening, forces upwards by means of angle pinions the driver's seat, giving a clear entrance to the back seats, if on an open body, and to the interior if closed.

Autos Affect Price of Horse Flesh.

Dealers in horseflesh are said to be feeling the effect of the automobile in many ways. The dropping off of sales in high-class coach and carriage horses is felt seriously. Customers who annually bought spanking, high-priced teams are scarce, and that class of people are restricting their purchases to an occasional animal for station use or a saddler for a constitutional through the park. It is the opinion of many of the horse dealers, however, that the automobile craze, like the bicycle exodus of a few years ago, has reached its limit, and will in time revert back to team driving.

Dealers report a fair demand for saddle and general business horses, but prices are low and may continue so during the winter months. The bottom has dropped out of "speed" sales, and prices are ruinous to the dealer who goes West and ships his horses East, expecting big profits.

Branford Re-enters Racing Field.

The management of the Branford (Conn.) fair are contemplating the addition of automobile races this year. If the effort to add such races is successful—and of course the number of entries in a large measure will determine that point—one day of the fair will likely be devoted to them.

Most people have forgotten it, but it was at Branford that the first regularly organized automobile meet in this country was held. This was five years ago. Although successful from a sporting viewpoint, the attendance was very slim, and the races have never been repeated.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—At Low Prices: Standard 4 Cycle Motors; Single Cylinder, 3½ H. P.; Double Cylinder 8 and 12 H. P. for Automobiles. Same with bases for launches. N. B. HARRINGTON & CO., 106 Broadway, Buffalo, N. Y.

FOR SALE—Crest Model D with tonneau, nearly new, perfect condition, brand new tires; have larger car; price, $675. Dr. C. E. COOK, New London, Iowa.

SEND stamp to C. A. Coey & Co., 53rd and Cottage Grove, Chicago, for the largest list of second-hand machines ever issued.

FOR SALE—1904 Oldsmobile Runabout, used some for demonstrating. Like new, for $475. Address FRANK FLODING, Lorain, Ohio.

FOR SALE—Mobile Steamer; fine condition. $200 if sold at once. J. B. SUTTON, Shenandoah, Iowa.

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One two-seated Steam Automobile. The front seat closes and makes a nice appearing front. Has been run about 100 miles.
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12 Boiler Shells.
5 Steam Engines, without Jackets or Pumps.
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12 Oil Pumps, Carter Automatic.
2400 Copper Tubes, ½ inch x 16½ inch.
30 Air Tanks, Copper. 7 x 30.
40 Sets Cylinder Castings Machines.
40 Sets Castings for Differential.
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9 Air Gauges, No. 100.
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Made Drunk Pay for Ride.

An Illinois judge has decided that it is legal to charge a drunken man $7.50 for driving him around in an automobile until he was partly sobered up.

It appears that while Frank Whiting and Morris Smith were riding in a rented automobile one evening in Peoria, Ill., they found William Laughlin lying helplessly intoxicated on the sidewalk. In response to his request for them to take him to the Hotel Lud, they placed him in the automobile, and he, being then and there much befuddled, told them that he would give them $5 for the service. After he got in the seat he further promised to raise the bill to $7.50 if they would ride him around for an hour until the evening air cooled his fevered brow. They not only did so, but doctored him with bromo seltzer, and by the time they delivered him at the Hotel Lud he was in pretty fair shape.

After he got sober he repudiated the bill and then they sued him. The case came up in the court of Justice Schofield, and it was decided against the defendant, a judgment being rendered in favor of the automobilists.

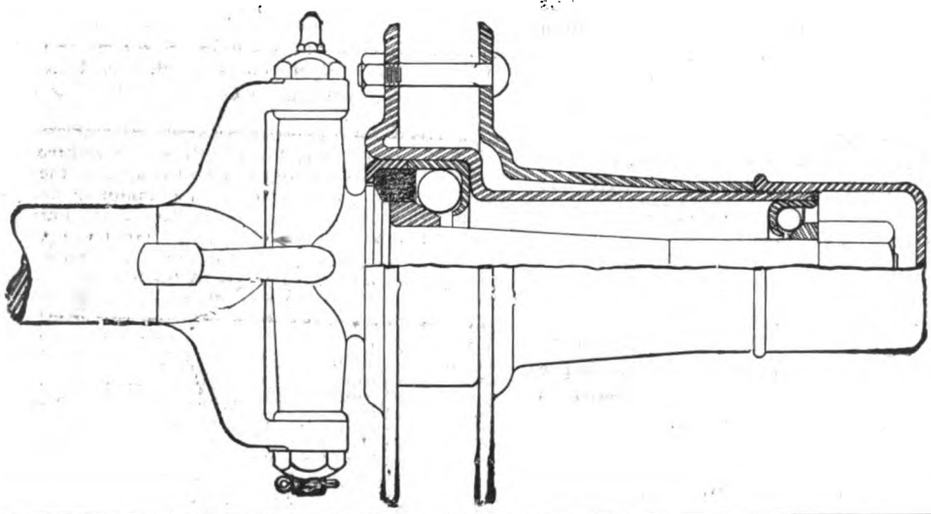
Another Club for Vermont.

With twenty-five members, an automobile club has been formed by motorists of Burlington, Vt. These officers were elected: President, Dr. D. C. Hawley; vice-president, O. S. Presbrey; secretary, E. A. Brodie; treasurer, G. A. Churchill.

'Frisco Supervisors Fix Prices.

After deliberating for several months and taking a great deal of testimony, the License and Orders Committee of the San Francisco Board of Supervisors has made a report on the rates to be charged on hiring automobiles. It recommends that $3 be the maximum charge for the first hour and $1 for each succeeding half-hour. An effort was made to place the first hour figure at $2.50, thus cutting down the present figure by half, but a protest from the automobile dealers prevented this.

The proposed ordinance is to apply to machines carrying four persons or less. There is to be no reduction for fractions of hours or half-hours.



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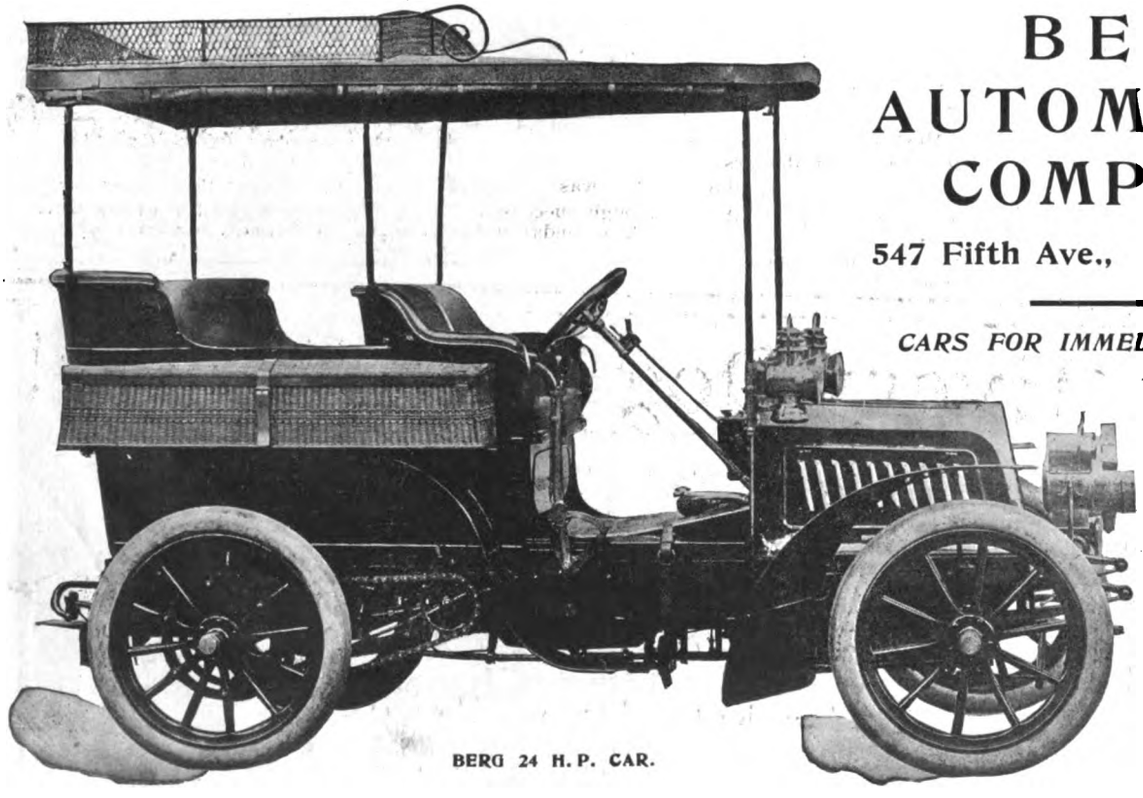
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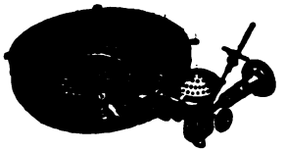


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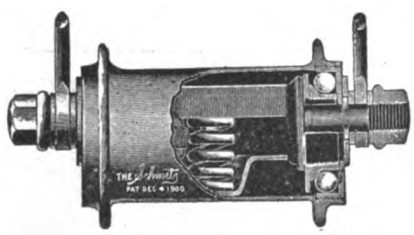
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"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 38 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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The Week's Patents.

771,272. Resilient tire. Sam T. Richardson and Richard Price, Birmingham, England. Filed October 30, 1903. Serial No. 179,215. (No model.)

Claim.—1. A pneumatic tire or other resilient tire, made with depression such as b2 on its inner periphery at regular intervals apart and adapted to engage with corresponding studs or projections at the bottom of the trough section wheel rim so as to prevent the tire from creeping, said depressions forming dome-shaped projections in the interior of the tire, substantially as set forth.

771,320. Internal combustion engine. Oscar P. Ostergren, New York, N. Y., assignor to Fuel Oil Power Company, New York, N. Y., a corporation of the District of Columbia. Filed October 2, 1903. Serial No. 175,462. (No model.)

Claim.—1. In an internal combustion engine the combination with a cylinder and a piston therein, of a fuel admission valve communicating with the interior of the cylinder, and a compressor comprising a cylinder and a piston, for operating said valve, the piston of said compressor equalized as to fluid pressure within the said engine cylinder by admission above and below same of fluid from the working end of said cylinder.

771,332. Induction coil. John Splitdorf, New York, N. Y. Filed February 23, 1904. Serial No. 194,794. (No model.)

Claim.—1. An anxiliary condenser for spark coils, the opposite terminals of said condenser being, respectively, connected in the primary circuit at opposite sides of the engine make-and-break device.

771,456. Suspension device for differential gearing. Auguste E. Brillie, Paris, France. Filed December 29, 1903. Serial No. 186,974. (No model.)

Claim.—1. The combination, with a driving axle, a differential shaft, and a bearing therefor, of a suspension device secured intermediate its length to the bearing, a collar carried by one end of the device for engagement with the driving axle, and a connection between the other end of the device and a fixed support.

771,492. Carburetter for explosive engines. Charles F. Parmenter, Portlandville, N. Y. Filed March 12, 1904. Serial No. 197,791. (No model.)

Claim.—1. In a carburetter, a capillary disk or partition, in combination with a pair of connected tubes for conducting liquid hydrocarbon of different qualities, a discharge nozzle supplied by said tubes and valves in close proximity to said nozzle for controlling said tubes individually and changing the fuel instantly at any moment substantially as set forth.

771,511. Speed regulator for explosion engines. William C. Tompsett, Warren, Pa. Filed October 6, 1903. Serial No. 175,925. (No model.)

Claim.—1. In an explosive engine, a hollow shaft having a flattened peripheral portion, a valve operating cam mounted upon such flattened portion and supported thereby, a rod arranged parallel with the shaft and conceted to the cam, and a governor connected to said rod.

771,538. Wheel rim for hollow tires. Elmer M. Downs, Chicago, Ill. Filed January 11, 1904. Serial No. 177,627. (No model.)

Claim.—1. The combination with a wheel rim having marginal flanges, and a hollow or pneumatic tire casing divided longitudinally to provide opposite base portions adapted to engage the rim flanges, or a centrally arranged independent binder adapted to engage the two base portions of the casing, said binder being transversely divided and arranged to be drawn and wedged against the base portions of the casing and in alternation therewith to be lifted up within the chamber of the casing; a rotary and longitudinally adjustable key adapted to detachably interlock with the binder and supported for adjustment radially as to the wheel rim to draw the binder against the base portions of the casing and in alternation therewith to raise the binder within the chamber of the casing according to the direction in which the key is longitudinally adjusted; and means for adjusting the key in a direction radially toward the centre of the rim.

771,565. Automobile. Henry Nyberg, Chicago, Ill. Filed September 13, 1902. Serial No. 123,255. (No model.)

Claim.—1. In an automobile, the combination of a supporting frame mounted on a pair of axles; an engine frame rigidly secured to said supporting frame; a driving shaft journalled in said engine frame; said engine frame being separable on a plane extending through the axis of said driving shaft in a suitable manner to permit the removal of said driving shaft without disturbing the connection between said engine frame and supporting bar; a flywheel rigidly secured to one end of said driving shaft; a driven shaft mounted in alinement with said driving shaft, and having its end which is opposite said driving shaft journalled on said frame; a ball and socket joint connecting the adjacent ends of said shafts; suitable yielding connections between said driven shaft and said flywheel; and suitable mechanism connecting said driven shaft with one of said axles, substantially as described.

"Motorcycles: How to Manage Them." Price $1. The Goodman Company, 154 Nassau street, New York. ***

Pressed Steel Stampings

save much in weight, machining and tool cost. Why not improve your product and add to your profit?

Write us for particulars.

THE PARISH & BINGHAM CO.,

Mfrs. of the Indestructible P. & B. Wheel,

Cleveland.

THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,

9 Packard Ave., Racine, Wis.

THE DUERR-WARD CO., No. 1787 Broadway, New York D'stributors.

ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor.

Cleveland Dust Shield



Does not interfere with entrance to tonneau. Made to fit any car. Easily removed. Rolls up into brass shield and out of the way when not in use. Price, complete, $12.00.

THE ACME MUFFLER for any hores power. Absolutely the most perfect muffler on the market Correspondence solicited.

ACME MOTOR CAR & REPAIR COMPANY,

Cleveland Ohio.

CYLINDER CASTINGS



FOR MARINE AND STATIONARY MOTORS
SUPERIOR QUALITY, PROMPT DELIVERIES

SEND PATTERNS FOR SAMPLES
OR BLUE PRINTS FOR ESTIMATES

THE MANUFACTURERS FOUNDRY CO., Waterbury, Ct.

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"WHITNEY" CHAINS for the Second Time Contributed to the Success of the

30-35 H.P. Columbia

Record Run, Chicago to New York

58 Hours, 35 Minutes, Total Elapsed Time.
51 " 05 " Actual Running Time.



HARTFORD, Conn., Oct. 7th, 1904.

THE WHITNEY MANUFACTURING CO.,
HARTFORD, CONN.

Gentlemen:—The **COLUMBIA** Car, which recently broke all records from Chicago to New York, was equipped with WHITNEY CHAINS, and, as usual, on **COLUMBIA** Cars, their PERFORMANCE WAS PERFECT.

Total elapsed time, 58 hours, 45 minutes. Actual running time, 51 hours, 05 minutes.

In 1903, when the **COLUMBIA** Car established the record of 76 hours from Chicago to New York, WHITNEY CHAINS were then used with the same excellent results.

ELECTRIC VEHICLE COMPANY,
M. J. BUDLONG, President.

THE WHITNEY MFG. CO., Hartford, Conn.

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Oldsmobile



The Best the Field Affords

By Reason of

1—Oldsmobile motor—ripe product of over twenty years successful experience.

2—Simplicity of mechanical construction. The absence of all gaskets. Cylinders and cylinder heads cast integral. Bearings self-oiling; cam shaft gearing entirely encased.

3—Easy to start—absolute impossibility of "kicking back" in starting.

4—Style, comfort, power, plenty of speed.

5—Light Tonneau Car equipped with tilting steering post, divided front seat, honey-comb radiator, etc.

On the recent Automobile Tour—from New York to St. Louis—the Oldsmobile Tonneau Car easily held its own with cars costing from three to fifteen times as much. It maintained an average speed of twenty miles an hour over the entire trip.

Oldsmobile Standard Runabout, $650.00; Oldsmobile Touring Runabout, $750.00; Oldsmobile Light Tonneau Car, $950.00.

All prices F. O. B. Factory. Catalogue Free. Address

Olds Motor Works,

1332 Jefferson Ave., Detroit, U. S. A.

Members of the Association of Licensed Automobile Manufacturers.

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IN THE

VANDERBILT CUP RACE

GOODRICH TIRES

were the only tires in the race which gave absolutely no trouble.

A CLEAN SCORE AS USUAL.

THE B. F. GOODRICH CO.

AKRON, OHIO.

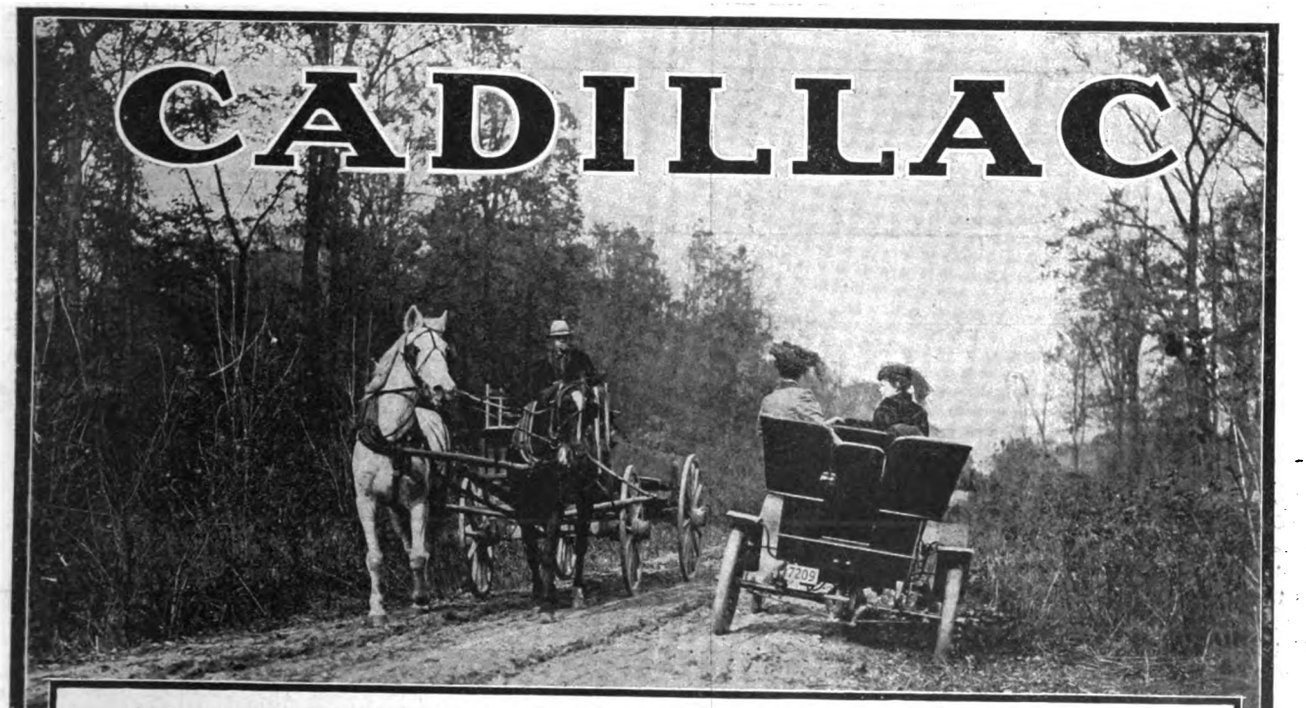
NEW YORK, 66-68 Reade St. and 1625 Broadway.
BOSTON, 157 Summer St. CLEVELAND, 420 Superior St.
CHICAGO, 141 Lake St. PHILADELPHIA, 909 Arch St.
BUFFALO, 9 W. Huron St. DENVER, 1444 Curtis St.
DETROIT, 80 E. Congress St. SAN FRANCISCO, 392 Mission St.
LONDON, E. C., 7 Snow Hill.

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POPE AUTOMOBILES

THE BEST PERFORMANCE
ever made by an
AMERICAN CAR
was the phenomenal record in the
VANDERBILT RACE
of the
Regular Stock 24 Horse-power
POPE-TOLEDO TOURING CAR
which defeated 15 competitors of double and treble its Horse-power.
Duplicate of the Winner,
Price $3,500.
POPE MOTOR CAR CO.
Toledo, Ohio.
"You see them everywhere."
Member Association
Licensed Automobile
Manufacturers.

CADILLAC



MR. B. M. SNEIDECKER AND PARTY IN HIS CADILLAC
GIVING RIGHT OF WAY TO A FARMER'S TEAM.
An 8¼ horse-power Cadillac motor, when tested after nine months of continuous service, developed 10¼ horse-power Does that kind of broken promise interest you?
CADILLAC AUTOMOBILE COMPANY,
MEMBERS OF ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS.
DETROIT, MICH.

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Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.



Auto-talks No. 1

In this, our first "Auto-talk" to the readers of Motor World, we do not intend to discuss speed, control or any of the technicalities of automobiling.

What we do want to talk about this time is *value.*

A sensible man doesn't want to pay any more for a thing than it is worth—he wants a thing to be worth all he pays for it.

He doesn't want to pay a big price just because the maker thinks he can get that price, and he doesn't want to be told that a machine is a *good machine,* when it is really only good for the money.

Naturally he asks "Why cannot the automobile business be put upon a solid footing of *cost* and *worth?*"

It was to answer this question that we started a great automobile plant eight years ago.

And to-day we offer to the public the **Autocar**—*an automobile that is built and sold on a commercial basis*—and the only one.

The Autocar is beyond the experimental, feeling-the-way stage.

It costs what it is worth—it's worth what it costs.

Every part from motor to minutest detail of mechanism is built upon lines that have been demonstrated by test and practice to be correct.

The Autocar has all the features of comfort, convenience and safety found in the highest priced car. Every part is instantly accessible. It is built throughout in the best manner of the best materials and finished in the finest possible style.

The Autocar has a speed of from 3 to 35 miles an hour. Extreme ease of control is attained through an unusually simple arrangement of levers.

The price of the Autocar touring car shown above is $1700—the Autocar runabout $900.

In our next month's talk we will give you more details of the Autocar's construction and performance. In the mean time we ask you to send for our booklet, in which are found addresses of our dealers throughout the country. There is one near you.

One thing is certain, you cannot afford to buy an automobile without investigating the Autocar.

THE AUTOCAR COMPANY, - Ardmore, Pa.

Member Association Licensed Automobile Manufacturers.



TO THE COUNTRY CLUB IN A

KNOX WATERLESS GASOLINE CAR

is just the proper caper—striking in style, luxurious in appointments, durable and **Best by Road Test.** Their record for reliability is incontestible. The Knox Patent system of air cooling is the only successful one—no overheating in summer. What others **attempt** to do the **Knox does.** Get beautiful catalogue of Tonneaus, Surreys and Runabouts.

6 Styles Passenger Cars and 6 Styles Commercial Cars.

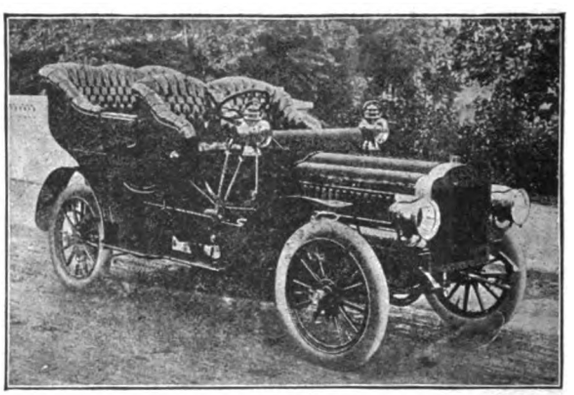
KNOX AUTOMOBILE CO.,

SPRINGFIELD, MASS.

Members Association Licensed Automobile Manufacturers.

Selling Agency in all Principal Cities.

The THOMAS FLYER Touring Car.



For beautiful and original (Side Entrance) body lines;
For great power, 40 H. P., 4 cylinders; simplicity of mechanism;
For reserve strength, large bearings;
For sweet and quiet running;
For its many unique conveniences, and
For value in dollars.

Agents desiring to join the Thomas "Flyer" Success Club should do so at once as it is now evident that all of the 1905 output will be sold before January 1st.

SEND FOR CATALOGUE. CALL FOR DEMONSTRATION.

C. A. COEY & CO., Chicago. WESTERN MOTOR CAR CO., Los Angeles.
C. S. HENSHAW, Boston. J. J. BARCLAY, Minneapolis, Minn.
H. S. HAUPT, 48th & B'way, N.Y. L. G. MARTIN, Pittsburg, Pa.

The Manufacturers,

E. R. Thomas Motor Co., 1210 Niagara St., Buffalo, N. Y., U. S. A.

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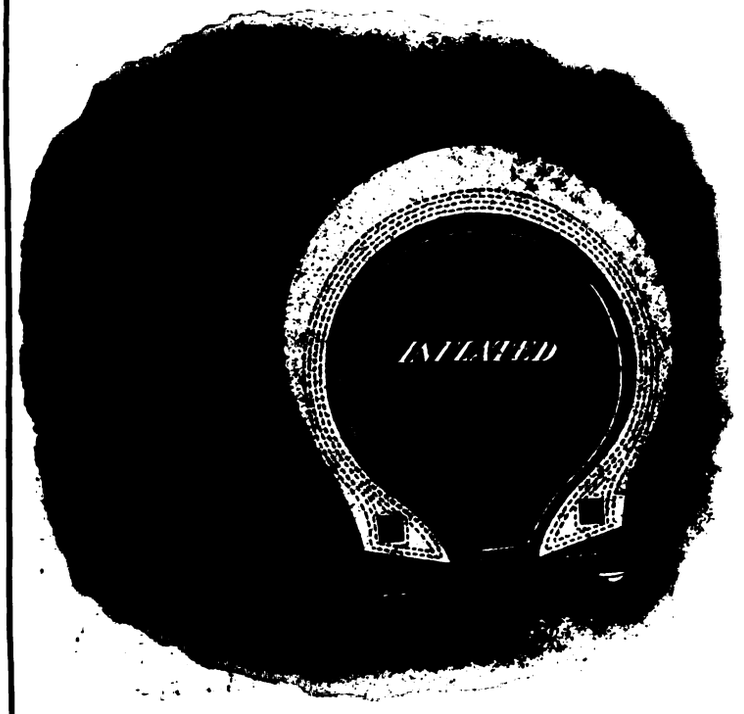
— THAT ETERNAL QUESTION —

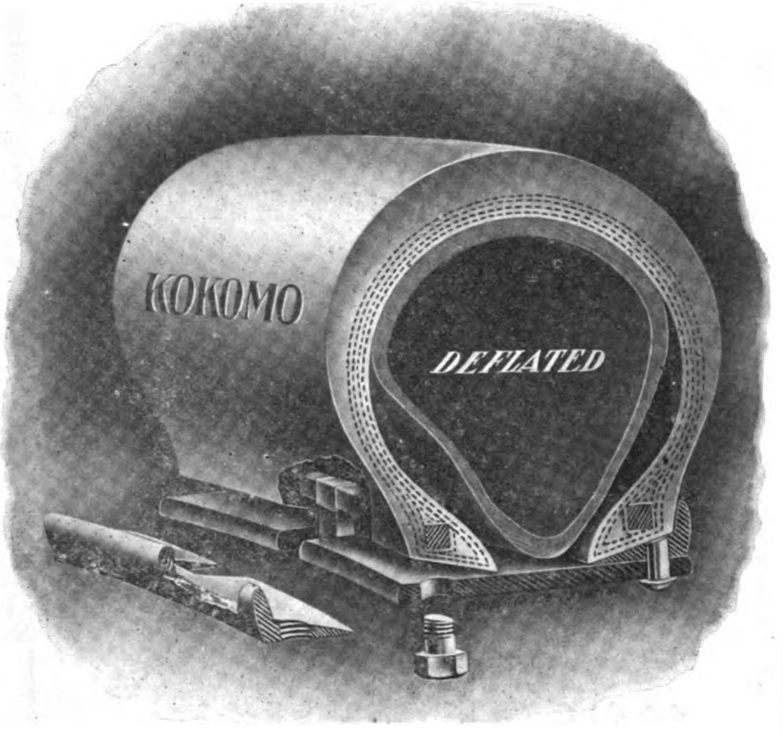
— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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Railway Exchange, Chicago, Oct 4, 1904.

"My four-cylinder *Locomobile* Gasolene Touring Car is entirely satisfactory. Received it May 19th, 1904, and today the Odometer indicates that it has run 7,260 miles. Except tires, we have had no trouble with the machine—it has not even been in the shop for repairs—think it is now running smoother than ever.

"I take great pleasure in recommending the *Locomobile* to my friends."

Yours truly, JOY MORTON

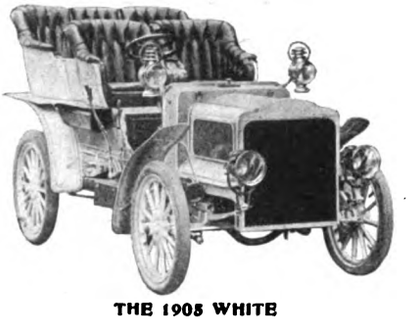
The *Locomobile* Company of America,
BRIDGEPORT, CONN.

BRANCHES: New York, Broadway and 76th St.; Philadelphia, 249 North Broad St; Chicago, 1354 Michigan Ave.; Boston, 15 Berkeley St.

Member Association of Licensed Automobile Manufacturers.

The Incomparable White

At Del Monte, Monterey, California, in a five mile open race for road cars costing $2,000 to $4,000, defeated four 4-cylinder cars, each costing practically twice as much as the WHITE and of double the Horse Power. The WHITE won—time 5.25.



THE 1905 WHITE

Remember that on the road there are very few cars that can keep ahead of the WHITE.

WHITE SEWING MACHINE COMPANY, Cleveland, Ohio.

IF THE RIM

LESSONS OF 1904

are taken to heart

"SWEDOH" Spring Steel Rims

are likely to be the general equipment of all good machines in 1905.

"SWEDOH" SPRING STEEL RIMS have conclusively demonstrated their superiority by the severest tests in actual service, giving results unattainable with rims made of ordinary stock.

"SWEDOH" SPRING STEEL RIMS are made true and stay true.

True as "SWEDOH" steel is axiomatic.

THE AMERICAN TUBE & STAMPING CO.,
Bridgeport, Conn.

We own and operate our steel billet-making and hot and cold rolling mills and stamping works.

PREMIER

AIR COOLED. DIRECT RADIATION.

The following letter speaks for itself.

Chicago, Sept. 12, 1904.

PREMIER MOTOR MFG. COMPANY,
Indianapolis, Ind.

Gentlemen—I wish to take this opportunity to tell you that I am more than satisfied with my machine. It has averaged seventy-five to a hundred miles daily since I purchased it. On the hottest day of this season—July 15th—Mr. George Elmslie and myself left Chicago, making a run of one hundred and thirty-eight miles without a stop save for luncheon.

I have made two trips to Oconomowoc without stop and return, and have stopped but twice or three times for insignificant repairs since using it.

I have had a great deal of experience in the last five years, and have decided that this is the best machine for my daily work and pleasure. All I need now is a coupe top for Winter work.

Cordially yours,
F. H. BLACKMARR, M. D.,
40th & Cottage Grove Ave.

1905 Cars Now Ready for Delivery.

Premier Motor Mfg. Co.
INDIANAPOLIS, IND.

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MORE ABOUT WINTON POLICY FOR 1905.

Automobile manufacturing success depends upon three principal considerations:

1.–Studying the desires of the buying public, to know ***what is wanted.***

2.–Designing and building to ***gratify that want.***

3.–Having complete manufacturing facilities, making it possible to ***deliver the goods*** when they are wanted and at a ***reasonable*** and ***attractive price.***

With our elaborate manufacturing facilities (our plant is the largest and best equipped in the world), we are most thoroughly able to produce and ***deliver the goods*** at a price which will certainly be ***reasonable*** and ***attractive.***

We have, during the past year, studied most carefully the desires of the buying public. We are very certain that the models decided upon will win increased fame and popularity for the house of WINTON.

The automobile purchaser to-day ***knows what he wants.*** And he also knows somewhat of values.

The new WINTON models, which we will very soon announce and be ready to market, have been designed and developed after very carefully considering, down to the minutest details, the wants of the buying public.

In fact we are going to provide some radical improvements in the direction of ***simplicity*** and vastly increased ***motor efficiency,*** of which Sales Agents and users have no thought at the present time. And these improved features will be ours exclusively. We own the patents and propose giving WINTON purchasers the full benefit.

To the hundreds of inquirers who ask whether Mr. Winton has designed a four-cylinder vertical motor incorporating all the advantages of our horizontal construction, and at the same time eliminating all the annoying disadvantages of the present day vertical motor as designed by other manufacturers, we are obliged to report our decision to hold off a week or two more before announcing our complete manufacturing policy for the ensuing year.

Sales Agents not now in touch with our Sales Department are respectfully asked to communicate.

To all responsible Sales Agents this word of advice: Don't "load up" with a line of uncertainties. Wait. We will soon announce a most complete line of cars. The different models will please you because they will please your customers. We will do business with you and you can do business with a large percentage of prospective purchasers if you control WINTON products in your territory during 1905.

THE WINTON MOTOR CARRIAGE CO.

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

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Now is the Time

to submit your

SPECIFICATIONS

for

FORGINGS

to insure

prompt deliveries.

We are ready.

Don't delay.



THE BILLINGS & SPENCER COMPANY, Hartford, Conn.

Makers of

Drop Forgings of every Description.

FIRE PROOF



Hotel Lenox

Boylston and Exeter Streets
Back Bay, BOSTON

ONE OF THE FINEST MODERN FIRE PROOF HOTELS IN THE COUNTRY. TWO MINUTES' WALK FROM THE BACK BAY STATIONS, AND ONE BLOCK FROM COPLEY SQUARE

CHARLES A. GLEASON, *Manager*

Send for illustrated booklet



DAD SAYS IT BEATS THE DUTCH HOW MUCH POUNDIN' THOSE MORGAN & WRIGHT CLINCHER TIRES WILL STAND

MOTOR VEHICLE CO.,
Louisville, Ky.

MESSRS. MORGAN & WRIGHT.

Gentlemen—Enclosed please find order for six 28x3½ Casings and Tubes. We have given your tires a thorough test and find them to stand our work where others have failed. We put on a set of three different makes at the same time we put on yours, and have used them on Cadillac delivery wagons all winter for heavy work, and all the others let down, and yours are still good. We are now changing all our heavy machins to Morgan & Wright tires, as they are far the best we have ever used.

Yours very truly,
MOTOR VEHICLE CO.
E. B. Ayres.

MORGAN & WRIGHT

CHICAGO

NEW YORK DAYTON
DETROIT ST. LOUIS,
SAN FRANCISCO

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

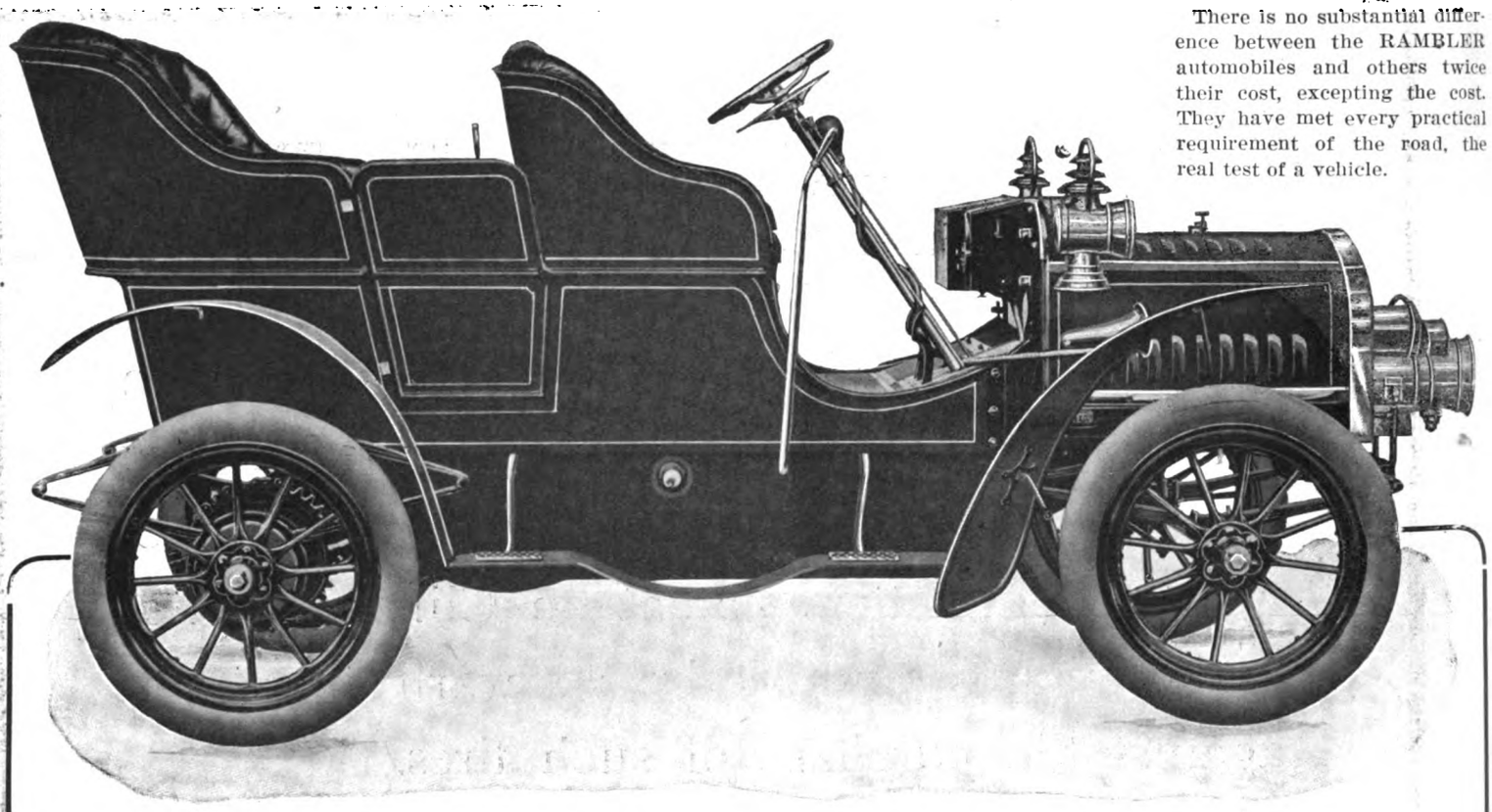
The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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There is no substantial difference between the RAMBLER automobiles and others twice their cost, excepting the cost. They have met every practical requirement of the road, the real test of a vehicle.



Rambler Surrey
Type One, Model 1905

Two Cylinders 16 H. P. $1350. Immediate Delivery.

SPECIFICATIONS

CAPACITY—	Five passengers.
WHEEL BASE—	90 inches.
FRAME—	One piece pressed steel.
SPRINGS—	Four full elliptic.
WHEELS—	Wood artillery, 30 inches.
TIRES—	Detachable, 3½ inches.
TREAD—	4 feet, 8½ inches.
STEERING—	Wheel, adjustable.
ENGINE—	Two cylinder opposed, each 5x6 inches.
POWER—	16 h. p., ample for grades up to 45 p. c.
SPEED—	Six to thirty miles per hour.
CARBURETTER—	One improved float feed.
COOLING—	Rambler thermo-syphon system.
RADIATOR—	Honeycomb type, increased surface.
IGNITION—	Jump spark system controlled by automatic governor.
TRANSMISSION—	Improved planetary type, no internal gears.
DIFFERENTIAL—	Spur gears, oil and dust proof.
BRAKES—	Two, one on transmission, the other on rear wheels.
FINISH—	Olive green, with brass trim.
EQUIPMENT—	Two gas side lamps, tail light, two gas head lights, with separate generator, brass tube horn, tools, oilers, pump and repair kit.

Write for complete information and illustrated matter of this and the $750, $850, $2000 and $3000 models.

THOMAS B. JEFFERY & COMPANY,

BRANCH HOUSES: BOSTON, 145 Columbus Avenue. CHICAGO, 304-306 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

Main Office and Factory: Kenosha, Wis.

NEW YORK AGENCY, 140 West 38th Street.

REPRESENTATIVES IN ALL LEADING CITIES. **SOME EXCELLENT TERRITORY OPEN.**

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, October 20, 1904. No. 4

TO SUPPLY GAS IN TANKS

Company Formed to Extend Avery System—One Maker Adopts it for His 1905 Cars.

In Indianapolis last week there was completed the organization of the Concentrated Acetylene Co., which had been forming for some little time. Carl Fisher is president and sales manager, and J. A. Allison, secretary and treasurer. P. C. Avery is general manager. Its capital is $10,000.

Headlights and other lamps will be included in the new company's productions, but its more immediate and chief purpose is the exploitation and extension of the Avery system of acetylene lighting. In a small way, Mr. Avery himself has introduced the system during the past year, but if the plans of the Concentrated Acetylene Co. attain fulfillment, there will result at least a partial revolution in the manner of muminating automobiles. Briefly, they purpose supplying steel tanks charged with gas which, when the supply is exhausted, will be exchanged for full ones. The tank is of seamless tube, and is 20 inches long, 6 inches in diameter and weighs 24 pounds; it is fitted with a ground joint union and valve at the upper end and a pressure gauge at the lower one. This gauge is so made that it will hold gas up to 550 pounds; that pressure will open the valve and permit escape, thus absolutely eliminating danger of explosion. The tanks are charged with gas compressed to 250 pounds, and contain 50 feet at this pressure, which is sufficient for two lights for 100 hours, or, with average use, for about three weeks; the charge for recharging is $1.50.

It is the intention of the company to establish agencies throughout the country, at which empty tanks may be recharged or exchanged for full ones. At least, one concern, the Apperson Bros. Co., of Kokomo, Ind., will make these tanks a part of the regular equipment of their 1905 cars.

The Concentrated Acetylene Co. has a new factory under roof and almost ready for occupancy. It will have a capacity of 25 tanks per day.

Diamond Men in New Settings.

A shift in the selling forces of the Diamond Rubber Company, which has been under consideration for some time, was effected this week, during the visit of Secretary W. B. Miller to New York.

Due to it, O. J. Woodard, manager of the New York branch, becomes general representative, and, while his headquarters will continue to be in New York, he will act as the company's general selling representative among the large trade. S. F. Randolph, manager of the Philadelphia branch, succeeds Mr. Woodard as New York manager, but will also retain control of the Philadelphia branch. G. L. Bradley, who has been Mr. Woodard's right hand man, goes to Cleveland to become manager of the Cleveland branch.

Long Pending Patent Finally Issued.

There was issued on Tuesday of this week patent No. 772,571, which, it is intimated, may have a considerable bearing on the electric vehicle trade. The patent, which has been pending since September, 1897, covers the general arrangement of control and reversing lever, and applies also to battery construction, connection and control. The inventions covered are those of H. P. Maxim, Harry N. Pope and Herbert W. Alden, all of which were assigned to the Electric Vehicle Co.

Atkins Resigns; Gould Moves Up.

Owing to continued ill health Arthur L. Atkins, long identified with the Pope interests and latterly manager of the Pope Mfg. Co.'s Chicago factories, has resigned that office. His successor is D. W. Gould, formerly assistant manager. Atkins has been ill for a year or more, and several times was so badly off that he was obliged to refrain from work and seek other climates. It was during these absences that Gould proved his possession of the ability that led to his promotion.

Banker Confesses Judgment.

Upon a confession signed by Albert C. Banker, president of the Albert C. Banker Automobile Co., Chicago, Judge Holdom last week issued a judgment of $353 against Banker. The action was instituted by the Winton Motor Carriage Co. for October rent of premises occupied by the Banker company at Michigan avenue and Thirteenth street.

PROTESTING THE AWARDS

Findings of Exposition Juries do not Pass Unchallenged—How the Decisions Were Reached.

Although the St. Louis Exposition awards, as exclusively announced in last week's Motor World, had received the approval of the Superior Jury, it is understood that several strenuous protests have been filed. Whether they will affect the findings cannot be foretold, of course, but that the bestowal of at least one of the grand prizes fairly staggered the industry is not to be gainsaid.

The methods employed by the juries of award in reaching their decisions are not generally understood. The average person labors under the impression that the awards are based wholly on mechanical excellence, but this proves not to be the case. This is made clear by Henry Souther, the well known expert, who served as a member of the automobile jury, who, in response to the Motor World's inquiry, explains the system that prevails in this wise:

"In the first place, there are five grades of awards, given in order of merit—the grand prize, gold medal, silver medal, bronze medal and honorable mention.

"There is no limit to the number of each grade that may be given. If all the exhibits were of equal rank, and of the highest possible quality, all would get a grand prize. If, on the other hand, all the exhibits were of inferior quality, all would receive a lower mark.

"As a matter of fact, it is not very difficult to classify all the exhibits under some one of the above five classes, and award in accordance with the relative standing. It must be understood at the outset that an exhibitor may receive only one medal, no matter how many different kinds of automobiles he may manufacture. A medal is not awarded for any one particular vehicle, as distinguished from the remainder of the product.

Many points are considered, such as the age and standing of the company in the financial world, its size and integrity; then

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the character of the exhibit, as presented at the Exposition—whether representing the entire product, or some one portion of it only. Then comes a detailed examination of the machines actually on exhibition, the machinery and its finish making one detail—a certain percentage of the whole; the body and its finish making a second, and the general considerations above mentioned influencing the whole.

"Another thing is the importance of the product in the commercial world; whether or not it plays any considerable part in the market for automobiles, or whether it is a highly specialized thing, having a very limited sale.

"After making all these notes, and completing the round of the entire exhibit, the juryman has pretty well fixed in his mind the general comparative standing of each exhibitor, as compared with all others.

"With all these facts and impressions in mind, the jury gathers about a table, consulting notes and data, and makes the award, consideration being continued until the vote is unanimous.

"It is not always an easy task at the best. There are some exhibits that are exceedingly hard to classify, but, as a rule, there is enough difference, all things considered, between the best and the worst to make a reasonable set of awards."

Suits Against the Sandusky.

A number of suits have been brought against the embarrassed Sandusky Automobile Co., of Sandusky, Ohio. The first of these is an action brought by the Mahin Advertising Co. to recover $1,000, with interest at 6 per cent, on a note given the Mahin Advertising Co. by the Sandusky Automobile Co. and J. J. Hinde and J. S. Bennett. When the note had matured there was no money to pay it. A second cause of action is for another note of $1,000 with interest, which has not been paid. Plaintiff prays judgment for $2,000, with interest at 6 per cent per annum from June 29, 1902.

Next, the Savings Building and Loan Co. of Sandusky filed foreclosure proceedings in five cases against the Sandusky Automobile Co. One case is against the Sandusky Automobile Co. and John Keimer for a loan of $900, alleged to have been made July 7, 1904, and one is against the Sandusky Automobile Co. and Charles Knupke for $900 for a loan alleged to have been made July 7, 1904.

The other three cases are against the Automobile Co. for the following alleged amounts: $800 on July 6, 1903; $950 on May 14, 1904, and $1,100 on May 14, 1904, all due the Savings Co.

Parker Becomes Advertising Manager.

After serving a term in the sales department, Burton Parker has been appointed advertising manager of the Olds Motor Works, Detroit. He is no stranger to either the duties or the trade, his long connection with the Hartford Rubber Works Co. having made him well and widely known.

SCHOOL FOR CHAUFFEURS

Locomobile's Experiment Panning Out Well—How the Pupils are Instructed.

While comparatively little has been said of it, the school for chauffeurs which has been maintained during the year by the Locomobile Co. at its Bridgeport factory, has achieved some happy results. The practical experience and knowledge of details that is gained by such a course of instruction is invaluable, and has boosted many young men into berths and wages that previously they hardly dared dream of. The school has really not received the attention it merits; indeed, the exact course which the pupils must follow was not known until last week, when John A. Kingman, advertising manager of the Locomobile Co., outlined the details. He said:

"We usually start a man assembling finished cars, and keep him there about a month. This gives him a good idea of the location of all the parts and how they are fastened together, and which means that he will know how to get them apart. This latter is very important knowledge.

"We then put him assembling the engine proper, which gives him the same knowledge in detail of the engine that he gains of the whole car in his first month's experience. We usually keep him on the engine job a month, completing his instruction, thereby instructing him in the testing of an engine for horsepower developed.

"The man is then transferred to the electrical department for about a week, where he has a chance to observe and work on the various electrical devices, which thoroughly instructs him in their maintenance and enables him to overcome difficulties he may meet with—the wiring system, dynamo, batteries, switches, etc.

"The man is then ready for the road, where he is given an hour or two of instruction each day for a couple of weeks, in the meantime working in the repair department, where his finished and perhaps best knowledge of the difficulties he may have to contend with are brought to him.

"For such instruction he is expected to willingly give his time without pay. Even in such cases we have found it unprofitable to continue instructing certain applicants. In most cases we discontinue on account of the applicant's total lack of necessary fundamental knowledge.

"The best men are recruited from the ranks of machinists, repair men, or assemblers, and especially those that have had practical shop experience in construction work, and more especially when such work has been in connection with gas engines, either for automobile or other uses to which the gas engine is put. Such men develop much faster than men who have had no shop training of one sort or another.

"Shop training of one sort or another is absolutely essential to the making of a first-class chauffeur. By this is meant one who can maintain as well as operate his car. It is, of course, possible to make a good chauffeur out of a man who has not had mechanical training, but it takes very much more time to do it."

New Chips off the Diamond.

Pursuing its policy of expansion, the Diamond Rubber Co. has opened new branches at Minneapolis and St. Louis. At the latter R. L. McCrea, who has long been identified with the Chicago office of the company, will be in charge at No. 3,966 Olive street, and at Minneapolis W. E. Roby, who has been looking after trade for the Diamond company in that section for some time, will take care of the business, the stores being located at No. 611 First avenue, South. Complete tire stocks will be carried at both new branches, which will begin business on or before November 1.

Motor With a Push Button.

The Detroit Auto Marine Co. has succeeded the Detroit Lackawanna Co., which latter was selling agent for the Lackawanna Motor Co. in Detroit and the West. They will market a new type of engine for automobiles and boats, and have their new models nearly ready for the market. It will be known as the "automarine" engine, and has been perfected so that it may be started with a push button. They are now fitting one of these in a car for exhibition purposes. The company will also market a new circulating pump, the Bradbery "Bi-Centro."

Wayne's Work Progressing Well.

The Wayne Wagon Works, the big implement and wagon concern at Richmond, Ind., which are likely to prove a factor in next year's trade, are progressing famously with the car on which they have been at work for some time. It is of the four cylinder, air cooled type, and the enormous facilities at the command of the company indicate that once under way there will be nothing lacking.

Waltham Adds Two New Cars.

For the 1905 season the Waltham Mfg. Co. will market, in addition to their buckboard, surrey, runabout and small tonneau, a four cylinder, side entrance car at about $2,000, and another car at about $1,500. These new cars are building under the eye of the Waltham company's new superintendent of construction, Leo Melanowski, formerly with the Winton Motor Carriage Co. and previously with Clement & Co., of Paris.

Where Wheels are Whirling.

The extensive plant of the National Wheel Co., Jackson, Mich., which had been shut down for thirty days for needed repairs and alterations, is now running again full time and full force. Manager Mercer states that they were never before so greatly rushed, the demand for their wheels forcing them to begin operations before the alterations had been entirely completed.

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LOGAN BEGINS TO LOOM LARGE

Western Concern That has Made Good Progress —Builds New Plant and has New Car.

Although it was accomplished without fuss or fireworks, the Logan Automobile Co., Chillicothe, Ohio, is one of the comparatively little known concerns that scored a very emphatic success this season. A 33 1-3 per cent dividend and a new factory are the substantial evidences of it. They have just taken possession of the new plant, which is shown by the accompanying illustration, and which



is admirably equipped for its purposes; in it the work on the Logan cars for 1905 is well advanced. There will be two of them—the touring car, which will be of 20 instead of 15 horsepower, as before, although the price will remain $1,500, and the "Logan Junior," a small two passenger car, of 8 horsepower, at $600.

The touring car will employ a two cylinder double opposed motor, 5x6 inches, with mechanical valves, and will have a side entrance tonneau, of course. The frame will be of angle iron, trussed, and be made in the Logan factory; the wheel base will be 94 inches. The Schebler carburetter, chain drive, sliding gear transmission and a clutch ingeniously operated by a flange on the flywheel, and which is claimed to entirely eliminate jerking and jumping, will be used.

Not the least feature of the Logan will be an adjustable steering post—one that may be shortened or lengthened, according to the height of the driver.

The "Logan Junior" will have an 8 horsepower air cooled engine under the hood, a wheel base of 90 inches, 32-inch light artillery wheels and solid tires.

Winding Up the American.

The affairs of the American Motor Carriage Co., of Cleveland, Ohio, which have been in the hands of the Prudential Trust Co. as receiver for many months, are about ready to be closed up, and the attorneys of the trust company will shortly file the formal report of the situation.

The property has been sold, and the entire assets are now in cash in the hands of the receiver. There will be a very severe loss to the creditors, as the situation now indicates that the creditors will receive but about 30 per cent of the amount of their claims. The company owed about $55,000 when it failed.

The Week's Incorporations.

Topeka, Kan.—The Smith Automobile Co., under Kansas laws, with $100,000 capital.

Chicago, Ill.—Garfield Automobile Co., under Illinois laws, with $15,000 capital. Incorporators: N. E. McDaniel, George Schien and Justus Chancellor.

St. Louis, Mo.—Original Automobile Supply Co., under Missouri laws, with $10,000 capital, half paid. Stockholders: A. L. Dyke, Carrie Dyke and Charles Peters.

Brooklyn, N. Y.—Brighton Beach Automobile Club, under New York laws, with $2,000 capital. Directors: W. A. Engeman, A. H. Battersby and C. H. Hyde, Brooklyn.

Memphis, Tenn.—The Memphis Motor Carriage Co., under Tennessee laws, with $100,000 capital; to manufacture steam automobiles. Officers—W. T. Watson, president, and Herbert H. Pilcher, general manager.

Detroit, Mich.—Schwarz Motor and Fire Truck Co., under Michigan laws, with $25,000 capital. Incorporators: Carl Schwarz, William H. Drittler and William J. G. Mourer, of Hancock; Byron J. Hart and Fred P. Obenauer, of Detroit, and William C. Bryant, of Brooklyn.

HOW THE DIAMOND DIFFERS

1905 Pattern of Famous Tire Embodies Many Substantial Alterations—What They Are.

Just what was meant by the announcement that the 1905 Diamond tire would be "still better and a full year in advance" was disclosed this week, when the new model was placed on view at the New York store of the Diamond Rubber Co. That the change is one of appearance as well as in construction is apparent at the first glance. Instead of being oblong in shape, as formerly, the tire is now nearly circular, thus being fashioned, as Manager O. J. Woodard put it, "in its natural shape."

It is in its construction, however, that the chief changes have been made. Instead of, as formerly, being cured in one piece, the main portion of the outer cover and the tread are now made separately, thus rendering possible the employment of two entirely different methods of curing. That of the cover proper is of a nature to insure the highest possible amount of durability and tenacity, to enable it to successfully withstand the various stresses and strains that are imposed on it in its capacity of a fastening. The tread, on the other hand, being merely a shoe, does not have to take any strain, and an entirely different method is adopted in curing. Thus each part is peculiarly adapted and constructed for the part it has to play when the complete tire is assembled.

In place of the smooth rubber tread hitherto used on Diamond tires, the 1905 pattern will be moulded with a cloth finish, such as marks a well known foreign make of tire. Experiments have demonstrated that this roughened tread acts as a partial preventive of side slip. With it the tendency to slip on greasy asphalt or macadam is considerably lessened, thus rendering it easier to control a car.

The method of attachment is, of course, retained unchanged, as is the well known Diamond lug, inner tube, etc.

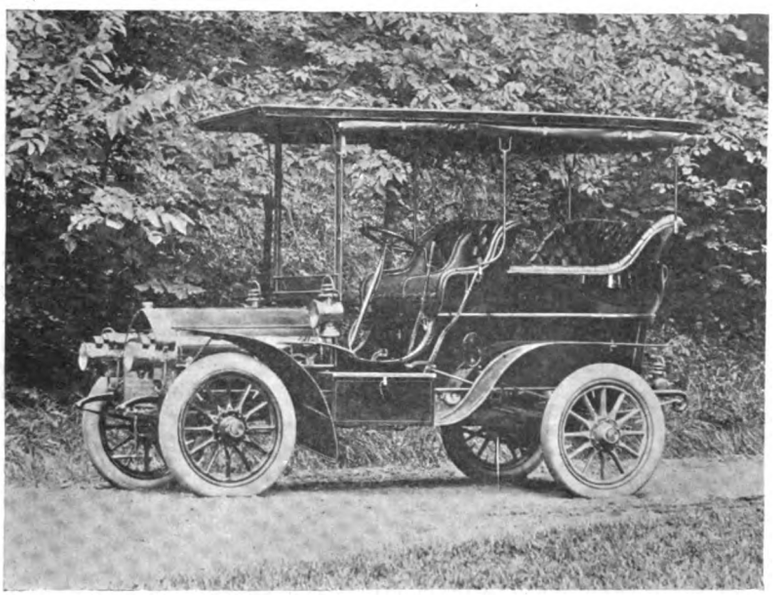
Pope to Exhibit in Paris.

The Pope Motor Car Company has engaged space at the Paris show, which opens in the French capital in December. They will exhibit some new models that have never been seen before in public. Herbert H. Lyttle, whose clocklike work with a stripped 24 horsepower Pope-Toledo car attracted so much favorable comment in the Vanderbilt Cup race, will be sent over to act as demonstrator of the company's product.

Zent Will Make Air Cooled Cars.

The newly formed Zent Automobile Co., Bellefontaine, Ohio, will manufacture an air cooled car invented by S. W. Zent, after whom the company is named. The fact that a real automobile factory is to be located "in its midst" has aroused the town to a considerable pitch.

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GRAND PRIX

AWARDED

HAYNES AUTOMOBILES

At St. Louis Exposition.

HAYNES CARS ALWAYS WIN! 20 other gold medals and first-class certificates won at expositions and in official endurance and reliability contests.

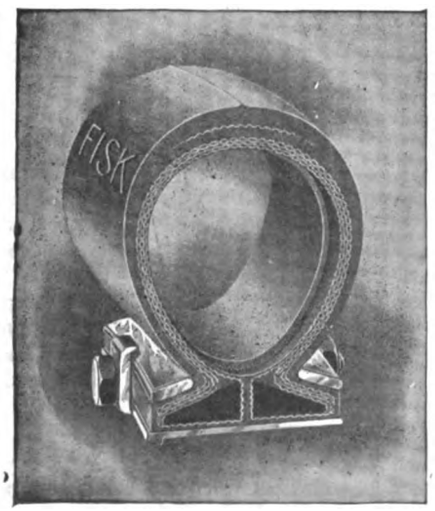
BUY THE CARS THAT ALWAYS WIN.

HAYNES-APPERSON COMPANY, - KOKOMO, IND., U. S. A.

Branches: New York, 1713 Broadway. Chicago, 1420 Michigan Ave. AGENCIES IN THE PRINCIPAL CITIES.

You Don't Need Accident Insurance When You Use

Fisk Mechanically-Fastened Tires.



THEY CAN'T FLY OFF THE RIM.

Air is essential for comfort; but see that it is properly harnesssd.

Fisk Method is Ahead of All.

BRANCHES AND REPAIR DEPOTS:

BOSTON, SPRINGFIELD, NEW YORK, SYRACUSE, BUFFALO, DETROIT, CHICAGO, SAN FRANCISCO, PHILADELPHIA, WASHINGTON, TORONTO, ST. LOUIS, LONDON, OMAHA, MINNEAPOLIS, DENVER, LOS ANGELES.

FISK RUBBER COMPANY,

CHICOPEE FALLS, MASS.

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☞ Those who are interested in motor vehicles will find the facilities and information of our office always at their command.

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The Chauffeurs' Stipend.

As many employers have learned to their sorrow, it is a foolish policy to save a few dollars in the chauffeur's monthly stipend. A competent driver is worthy of a fair wage, and if he does not get it he is pretty sure to make up for it in other ways. Likewise, an incompetent driver will cost his employer dollars where the latter saves dimes in wages. Inefficient running of the car and excessive repair charges are the unerring signs of one and sometimes of both these employes, and the owner of the car should be sufficiently on the alert to detect the trouble and put an end to it.

Frequently, however, the difficulty is to satisfy one's self of the competency of the chauffeur. Unless the owner is a practical man and thoroughly familiar with the management of a car, he cannot be sure, however much he may suspect, that his driver does not know his business. And if he feels that he is not qualified to pass on the point, and looks around for expert and at the same time disinterested opinion, he is at a loss to find it. His tradesman will do what he can to help him out of his difficulty; but often it is very little that he can do. His hands are, in a measure, bound, owing to the fact that the supply of capable chauffeurs is not equal to the demand, and that he must, therefore, avail himself of the services of those in the market, as well as recommend them to his customers. It will not do to be perfectly honest and say, in effect, that So-and-So is a mighty poor chauffeur, but he is the best you can get and you might as well take him. That would repel the customer at once and make him forever dissatisfied.

It is scarcely an exaggeration to say that this scarcity of good chauffeurs is one of the most unsatisfactory things about the automobile industry to-day. Tradesmen everywhere are confronted with it. "If you will get me a good chauffeur I will buy this car," is a not uncommon proposal, and what response the dealer makes is not difficult to guess. He does the best he can, and if that is a mighty poor best he cannot help it.

There is every reason to believe that the automobile schools and classes which are being arranged for in many cities all over the country will do considerable to relieve the present scarcity of chauffeurs. They make the opportunity which so many ambitious young men are looking for; and that many of they will grasp it is beyond reasonable doubt.

Intelligent Assembling.

A few days ago a machine came out of the manufacturer's shop and was turned over to a customer. It ran beautifully until one day it began to skip a little, and as he was a long way from home he thought he would take a look at his spark plugs.

He hunted up his big wrench, 8-inch or 10-inch; fitted it to the spark plug, pulled at it, hammered it with his fist; got another wrench, and hammered it with that; and the plug still stuck.

Then he went and got a piece of a fence rail that he could use as a club, and, after a while, he got one of his spark plugs out. This happened to be the one that was not giving any trouble.

Then he tackled the other; but the position was not quite as convenient, and, after fifteen minutes' fruitless effort, he gave it up for a bad job and went home on "one leg."

The concern was a fine one, the mechanics were fine; but think how they hurt the reputation of that particular machine by this kind of assembling. There is no reason why a spark plug should not be tightened with an 8-inch or 10-inch wrench only with a slight pressure. A well fitting spark plug will almost be tight from hand tightening. The least touch of a wrench is all that is necessary.

This seems like a small thing to read about it, but you may be sure the man with the wrench, the wooden club and the blackened finger nail did not think it small.

As a matter of fact, it was just as bad as though some more seemingly important part had gone wrong.

The skilled mechanic, with his specially fitted socket wrench and his conveniently long levers to pull on and his hammer to rap it with, is a nuisance. Less brute strength and more intelligence in the assembler would be a fine thing.

The fact that all trouble was cured at the works by removing the plug having a cracked porcelain, and substituting one of the owner's extra plugs, did not make him feel any better. A simple thing like a tight plug had spoiled a good ride.

Effects of Side Entrances.

It is believed that the forthcoming Paris Salon will reveal a marked advance in the matter of body construction, as instanced more particularly in the cars with side entrances, which promise to almost monopolize the exhibition. Paris coachmakers, who have for years designed and built the great majority of automobile bodies, are known to have been laboring earnestly to evolve the ideally practical body, and from the hints that have been given out from time to time there is every reason to believe that they have achieved coach work that satisfies them.

Of course, it is the side entrance that has caused attention to be centred on the body and led to the striving after the something in advance of past creations. For two or three years the side entrance has been a characteristic of French and German cars, with the result that the tonneau has fallen more and more into disrepute. But with the general adoption of the side entrance has come the necessity for a settlement of many problems which have long perplexed both coach and automobile builders. Foremost among these is whether a long or a short chassis shall be utilized; while the shape and

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size of the body has come in for a great deal of discussion.

Taking the latter first, the most debated question is whether the Roi des Belges body, in its exaggerated and bulging form in such general use, shall continue to be put forth as in the past. This pattern of body, originally designed for the Belgian King by a famous French coach builder, was purposely made bulging and rotund, although only to an extent that was founded on experience, and it had never been proved to be dangerous in any sense of the word. As such a design could not be patented in France the body in question has been extensively copied or rather distorted. These imitations, with their sweeping curves and projecting flanks, might give a fraction more comfort to the traveller than the original, but that there was danger in them there was no room to doubt. Experience has shown that when an overhanging body was mounted on a narrow chassis there was considerable sway set up at high speeds, with a consequent loss of stability and strain on the tires. This finally reached a stage where it became absolutely necessary to call a halt. This has at last been generally recognized, and future practice is certain to favor smaller and less bulging bodies than those now in use.

But with the substitution of the side entrance for the rear one used with tonneaus came the temptation to lengthen the chassis. Room had to be found for the side door, and the simplest as well as the most obvious way to provide it was to make the chassis longer; and a large number of makers did this, thus preserving the existing shape of bodies. But as wheel bases, and with them, of course, chasses, were already abnormally long, the addition of even a few inches wrought much harm. In traffic and in turning at high speed such cars were at a disadvantage alongside the old types. The result has been that coach builders have attempted other devices for providing the indispensable side entrances on short chasses, and in some instances with conspicuous success. There is yet room for new ideas, and, as stated, many of these are expected to make their appearance at the Salon in December.

In this country we have only made a beginning with side entrance cars. There is, for that reason, plenty of opportunity to avoid the mistakes of the French builders, and, by taking advantage of their experience, start right by producing bodies that will be as easily handled as the present all pervading tonneau type.

The Influence of Whiskers.

It must have been interesting news to the many men in and out of the trade who interested themselves in and who witnessed the race for the Vanderbilt Cup to learn that they are nothing but a lot of common "gamblers and idlers" saturated with "morbid cravings for excitement."

They probably did not appreciate the fact, and did not realize that the race was a "barbarous exhibition" until they were so informed by the bewhiskered if Horseless Age last week.

These frothings of that sheet would be pitiable if they were not amusing. They suggest an overflow of bile arising from a disordered liver, or of the anguish that comes of untangling knots in frazzled whiskers.

The "idlers" and "gamblers" can afford to view charitably their critic, who apparently did not even attend the race, and who relied on the "yellows" for his information. If the "gamblers" have any liver pills or indigestion powders to spare, they should be gratefully received by the Horseless Age.

Gears and Brute Strength.

If it were made a point to impress upon each purchaser of a car with sliding gear transmission exactly what takes place when a change is made from one gear to another, a great deal of good would be accomplished. We believe that it would pay to rig up a working model so that customers could see the mechanism in actual operation, for then, and then only, could those inferested obtain a proper and adequate idea of the process and see what a strain is imposed on the comparatively frail and highly tempered disks of steel which, with their circumference fashioned into teeth and mounted on shafts, constitute the gears.

Four men out of five will, once the modus operandi of gear changing has been demonstrated to them, exclaim that the wonder is that more damage is not done with chipped and broken gears, bent and twisted shafts, etc. And they are right. It is a marvel. Only good and cunningly manipulated steel, with just the proper amount of temper, would stand the racket. One has only to remember that the gears on two rapidly revolving shafts are thrust in and out of engagement at frequent intervals, ofttimes the manipulation being done by an inexperienced driver, entirely ignorant of the working of the delicate mechanism intrusted to his care, to form a pretty good idea of what might happen. That accidents are rare is one of those things not easy to understand.

It is true that the driver who, with his engine running at full speed on, say, his second, suddenly throws in the lever on the fourth by brute strength, without making even a pretence of "feeling" for the next gear, frequently pays the penalty for his lack of consideration in the shape of damaged gears or shafts. But in such case he invariably blames it on the car or its maker; anything rather than on himself, where it properly belongs.

At the same time it should be remembered that drivers of this class almost invariably err through ignorance. If they could be induced to study the mechanism of the gears by such a method as that referred to, they would undoubtedly become vastly better drivers and their cars would be handled with an intelligence that would bear fruit in insuring increased satisfaction.

On the principle that it is better late than never, the Automobile Club's tardy suspension of Mr. Harkness is to be commended. The Motor World condemned that young man's mad and sensationally touted dash from Boston to New York at the time it occurred, and commended him to the attention of the club. The club's action naturally has caused something of a breeze, but there is a real breeze of longer standing in the organization whose equally mad and more frequent, if unheralded, dashes through Long Island are matters of common notoriety, and who should have some of the wind taken out of his pace if it is impossible to remove it from his name.

The bewhiskered Horseless Age, which did not attend the Vanderbilt Cup race, condemns it as "of no earthly use." In the same issue one of its contributors, who did see it, relates that "during and after the race" he "talked with five different men, all of whom declared their intention of purchasing automobiles," their decision being influenced by the race. It is not the first time that whiskers have become entangled in their wearer's eyes.

It seems about time to cease fooling the public with those photographs designed to show the terrific speed of particular automobiles, the speed being represented by a distorted forward inclination of the car. The distortion is not even a freak of the camera. It is due merely to a trick of the operator in moving the camera as the object moves.

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HOW HIS PROFITS SHRINK

Unusual Expenditures Make Big Hole in Retailer's Commission—A 20 Per Cent. Business.

"Most people have an impression that the profits in the retail automobile business are enormous, and appear to think that we should be rolling in wealth. It would surprise some of them to know just how little there really is in it, when a balance comes to be struck," remarked a well known Metropolitan dealer last week.

"Such people merely view the commission received by dealers. They calculate that 20 per cent on a car listing at $1,000 is $200; while on one costing $4,000 it is $800. 'My! What a lot of money!' they will exclaim, never stopping to think that there are expenses of all kinds to be set against this lump sum—expenses entirely separate from the ordinary fixed charges, such as rent, wages, interest, etc., which any merchant has to calculate upon. The automobile business is a new one, and the automobile dealer has to put up with a lot of expense that will not be incurred a few years hence.

"A rough calculation will show that a charge of $200 will frequently be run up against a car by the time a sale is effected and delivery made. To begin with, there is the item of freight; on a big car, if the factory is in the West, that will easily run between $50 and $75. Then comes uncrating and setting up the car and testing it to see that everything is working properly. Next come the demonstrations. There's your supply bill, the time of your salesman or chauffeur—or both—and the thousand and one things that are likely to crop up and entail expense; and, as you are selling an article that runs into thousands of dollars, you naturally do things in a lordly way that recks little of expense.

"By the time it is all through, you are lucky if your outlay stops short of $200. Then there is your establishment to keep up. No one can have an idea of the enormous aggregate of expenses incurred unless one is actually in the business. You have got to do business on a big scale or you can't do it at all. It takes half a dozen men to sell a car, and you don't sell very many in a day. In fact, you don't sell many in a week, yet your expenses run on just the same.

"Any one who enters the retail automobile business thinking that it is a sort of El Dorado is booked for a sudden and sad disillusion. The proper way to look at it is this: It is only a 20 per cent business, as far as profits are concerned, whereas there are plenty of others paying all the way from 25 to 40 per cent; while the expense end of the business has the extraordinary expenditures attendant upon the sale of hazardous goods without the enormous percentage of profit that usually goes with such goods."

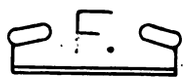
France's Enormous Export Increase.

France's imports of automobiles continue to increase enormously. During the first eight months of 1904 their value just fell short of $10,000,000, an increase of nearly 40 per cent over the figures for the same period of 1903.

Returns just published by the administration of the douanes show that there have been exported from January 1 to August 31, 1904, automobiles to the value of $9,895,000, while in the corresponding period of 1903 the figures were $7,295,000, and for 1902 only $3,978,200. For the same period the imports have been: 1904, $471,400; 1903, $133,200; 1902, $119,800.

Fisk Adopts a Rim Brand.

Henceforth the Fisk Rubber Co. mean that the reputation of their tire shall not be endangered by the use of indifferent rims.



To that end, and like other tire makers, they have adopted an inspection mark with which all rims approved as being fit for use will be branded. The mark is of the accompanying design. Only such tires as are used on rims so branded will be covered by the Fisk guarantee.

Three Cylinder Mercedes Coming.

It appears that the Daimler Motoren Gesellschaft (the German Daimler Co.) have been experimenting for nearly two years with a three cylinder motor of 8-14 horsepower, which has been designed to replace the 8-12 horsepower four cylinder Mercedes, model 1901. The rush of business has prevented them from giving so much time to the perfecting of the three cylinder motor as would otherwise have been the case, but it is to be hurried on very rapidly now, and it is probable that cars equipped with it will be on the market by next summer. The output of the great Cannstatt firm for next year is likely to total something like fifteen hundred cars.

Boston Firm in New Quarters.

Reed & Underhill, the energetic Boston representatives of the Knox car, have moved into their new quarters, 222 and 224 Columbus avenue. The building is located in the heart of the automobile district. It is a two story brick structure, and was practically built for the firm, which now occupies the greater portion of it.

The frontage is 45 feet and it has a depth of about 80 feet, being formed in a triangle.

Dayton Dealers Disagree.

Suit has been brought by W. Scott McDonald, of McDonald & Duvel, automobile dealers of Dayton, Ohio, to have the partnership dissolved. He says his partner and himself cannot agree as to the conduct of the business, which is being carried on at a loss.

SUPERVISORS RECONSIDER RATE

And 'Frisco Dealers Present Figures to Show That Rental Automobiles are Money Losers.

After seeming to have been definitely settled, the matter of fixing rates for hiring automobiles in San Francisco has been reopened, and the discussion over it rages more fiercely than ever.

It will be recalled that the matter came before the Board of Supervisors in the shape of an ordinance reducing the maximum charge for automobiles used for hiring purposes from $5 to $3 an hour. This was, after much debate and in spite of strong objections from San Francisco automobile dealers, passed. Last week, however, Supervisor Hocks moved to reconsider the vote by which the resolution had been passed, and this was agreed to in order to hear some further arguments against it.

Max Rosenfeld, of the Pioneer Automobile Co., said his concern had lost $30,000 in a year. The cost of running a machine, he said, was $3.76 an hour. The price fixed in the bill was $3 an hour and $1 for each subsequent half hour. He declared that at $3 every concern would go out of the renting car business. Personally, he would be glad to get cost for his stock in the company. Chauffeurs, said Rosenfeld, were paid $1.50 an hour when they worked. At that rate they earned about $100 a month. In Los Angeles chauffeurs received $40 to $60 a month. Rosenfeld said automobiles were luxuries, and that it made little difference to customers whether the rate was $3 or $5. The big cost of operating a rent wagon was said to be in repairs, due to the bad pavements.

H. L. Morrison, of the Central Automobile Co., made out a very bad case for the automobile livery business. Supervisor Rea remarked that the committee was able to find but one rental agency that was not losing money, but he said it was admitted that with a lower rate more machines would be used.

Supervisor Brandenstein felt that it would be well to go slow. He was not ready to vote. Notwithstanding the assurances of the committee that it was satisfied, he moved that the matter be referred back to the committee to find out the actual profits made from rentals. He said the finance committee would assist, if desired, and issue subpœnas.

The matter was taken up, said Braunhart, on the request of many patrons of automobile liveries, who believed that the rates were excessive. He explained that many agencies rented machines as an aid to advertising. Nothing had been brought forward to show that $5 an hour was not excessive. One firm ran ten machines 1,700 hours in one month. He wished, being author of the bill, that it be referred to the committees on finance, streets and licenses. On a general remonstrance being offered, he omitted the finance. This was agreed to. The clerk was instructed to get rates from other cities.

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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

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WOOD ALCOHOL SOVLES IT

Expert Souther's Tests Seem to Settle Freezing Problem—How to Use the Alcohol.

During the last severe winter the writer made some practical experiments in the way of finding out what mixture could be used in the cooling system of an automobile that would prevent freezing and at the same time not be in any danger of injuring any part of the automobile.

Various salts, glycerine and wood alcohol were considered.

Wood alcohol was chosen for the first experiment because there was not the slightest chance of its injuring any machine. The success was such and the duration of the test was so long that nothing else was tried.

For the benefit of those, however, who care to run a machine during cold weather, the writer gladly gives the results of the experiments. Perhaps the most valuable use that can be made of these results is from now on, at a season of the year when riding is very acceptable during most of the day, but with light frosts at night and a sufficient degree of cold to ruin a cooling system if containing water only.

The character of the experiment conducted was this:

First—A set of laboratory freezing experiments to determine what percentages would freeze under artificial conditions. This showed at once that it was possible to use wood alcohol and water and resist almost any degree of cold.

Second—The next question to answer was whether or not the wood alcohol would separate from the water and waste away so fast that the scheme would be too expensive. Of course, this possibility amounted to but very little in extremely cold weather, but in mild days it was felt that considerable alcohol might be lost.

To demonstrate this point a water cooled machine was taken, and about 18 per cent of wood alcohol was added to the mixture. The whole system contained about seven gallons.

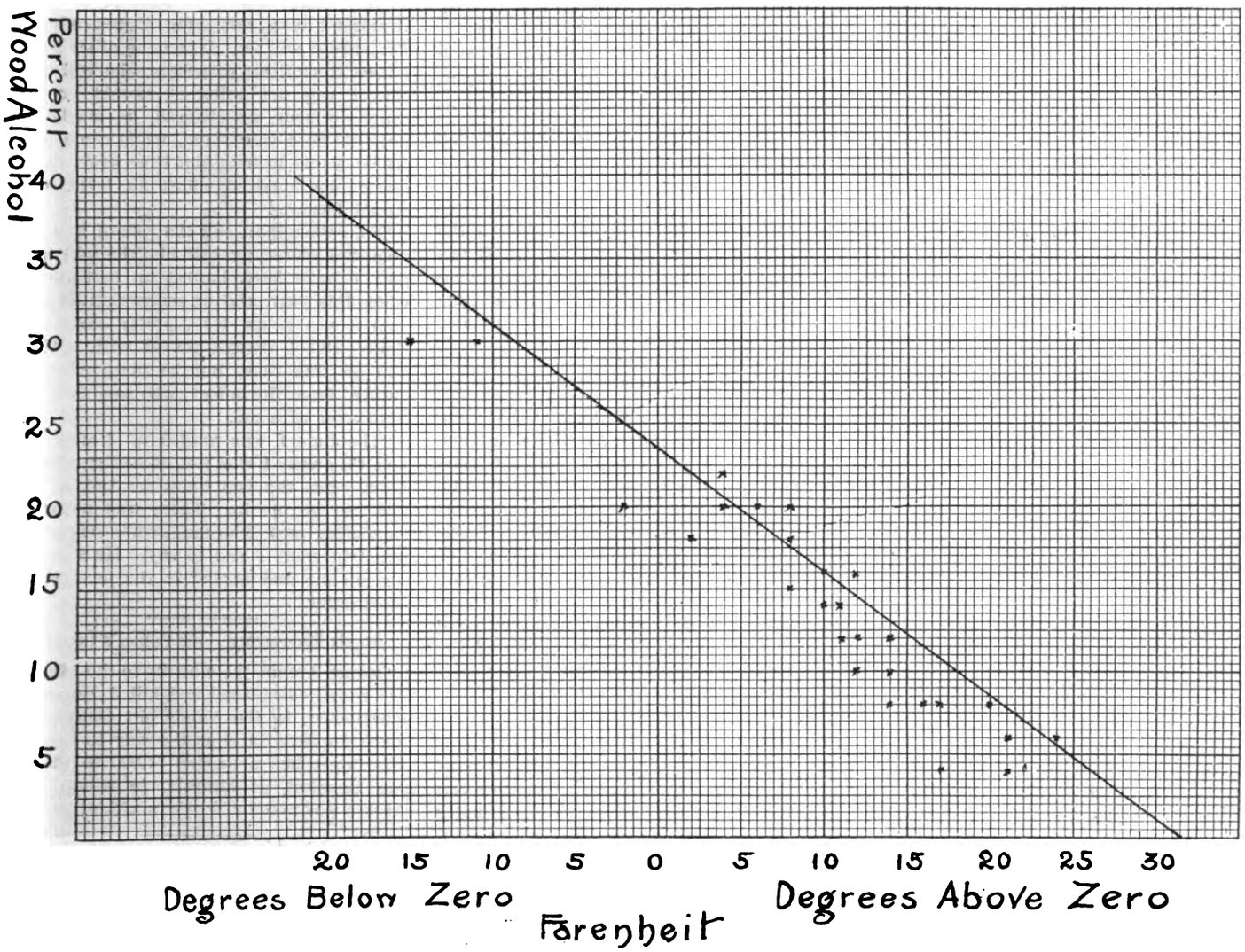
Various experiments were made by connecting a bottle with the top of the radiator into which a pipe led from above the water level, the idea being that any vapor formed would rise into the cold bottle and condense. It was found that, except under extreme conditions, no vapor at all arose. By extreme conditions, I mean any mild day, allowing the machine to run standing still, there being no fan for cooling.

This immediately led to the thought that it might be possible to entirely close the system in cold weather, thus obviating any chance of loss by boiling away. This was done and a pressure gauge put on and connected with the system. The highest pressure obtained at any time and under very severe conditions was six pounds.

This means that there are some machines that can be run with the use of alcohol without any loss whatever, there being a certain number of makes that run with a closed system.

It is also quite possible that many machines can be run with a closed system that now have relief tubes. The safest way to find this out in an inexpensive manner is to take a small bit of rubber tubing, fitting the end of the blow-off pipe, put a wooden plug in one end of it, and slip the other over the tube lightly. Any pressure that would injure the machine at all would blow this off and prevent injury.

Later in the season, when the temperature in this locality was as low as 15 degrees F. below zero, 33 per cent of alcohol resisted



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freezing perfectly, even when the machine was left out of doors over night.

Within the last week or two the writer has been using 32 per cent of alcohol, with the temperature around 50 degrees F. and 60 degrees F., with a result that the mixture did boil slightly, but not enough to be dangerous.

This simply shows that at this season of the year it is not necessary, nor is it wise, to add much alcohol. It is not probable that the temperature, just now, or up to the 1st of December, will drop below 10 degrees F., in which case 15 per cent of alcohol is enough.

As the season progresses and December is reached and zero temperatures are possible at any time, nothing less than 25 per cent would be safe.

The question will be asked at once how to know whether or not the per cent of alcohol is diminishing in your water system. With nice laboratory instruments, it has been easy for the writer to study this matter, and easy to tell just how much loss there has been. For the ordinary operator, it is not easy, as the specific gravity varies very little from pure water, and it takes a finer instrument and better conditions than are likely to be found under ordinary circumstances. After all, the best and easiest way is by the odor. If the operator will mix up, say, a 20 per cent and a 10 per cent solution, put them in bottles and keep, he can have a standard of comparison that will really be quite accurate, with the assistance of his nose.

Even with the open system, the circulation and the cooler becoming quite hot in mild days, the loss of alcohol by boiling is extremely small. It is apparent that the alcohol does not go away by itself, but that the mixture of alcohol and water goes together, so that the percentage left remains practically the same.

Simultaneous with this practical using test another freezing experiment was carried out.

A number of test tubes were made up containing varying percentages of alcohol all the way from 4 per cent up to 30 per cent in steps of 2 per cent. These were placed in a basket outside of a window in a very cold place, and in the basket also a maximum and minimum thermometer. At 7 o'clock each morning the tubes were examined and the highest percentage of alcohol frozen noted. The results from slow and natural freezing like this, and duplicating the conditions or actual use, were a little different from the artificial laboratory freezing experiments.

The results obtained are shown on the accompanying curve. In drawing this curve the writer has been conservative, and the results possible are a little bit better than the table.

By consulting this the operator will be able to see at a glance about what alcohol is necessary to use, the only caution being not to add any more than is necessary.

The use of glycerine and alcohol seems likely to solve the question for both hot days and cold days; the boiling point of glycerine being considerably higher than that of water will average the low boiling point given by the alcohol, so that the mixture will be reasonably high.

The writer will make practical experiments along this line and give the results as early as possible.

The use of glycerine is a little more dangerous than the use of alcohol because of the possibility of its breaking down in contact with the hot cylinder wall, and partially closing or making a sort of insulation on the walls of the iron. Alcohol is not dangerous in any way. HENRY SOUTHER.

Long Distance Records Go at Cleveland.

The automobile records for fifty and twenty-five miles were broken on Wednesday at the Cleveland Driving Park during a matinee race under the auspices of the Cleveland Automobile Club and sanctioned by the American Automobile Association.

Charles Gorndt drove his Winton fifty miles in 55 minutes 42 seconds, against the former mark of 1 hour, 1 minute, 23 1-5 seconds; and Earl Kiser sent his Bullet twenty-five miles in 23 minutes 59 seconds, as against the previous record of 28 minutes, 40 2-5 seconds.

Were Insured Against Accidents.

According to the New York Journal of Commerce, the liability of the American Automobile Association as regards claims for damages in connection with the Vanderbilt Cup race, were covered by a policy written at Lloyds, London. The risk carried by Lloyds was understood only to apply in case of claims by spectators resulting from accidents and not to cover the participants in the race. Practically all the liability insurance companies doing business here were offered the line, but declined, and the deal was finally closed with the Lloyds by cable.

California Endurance Run Off Again.

After an infinity of talk and a number of postponements, the proposed endurance run from San Francisco to Los Angeles, under the auspices of the Automobile Club of California, has come to naught. The date for the contest was finally decided upon, after much parleying among those interested, for October 12.

Now it has been again postponed, this time to the spring of next year. The decision to postpone the event was reached last week by the executive committee of the club.

When the Police Hesitate.

Chauffeurs of experience soon get to know the processes of reasoning indulged in by their sworn enemies, the bicycle and mounted police, whose duty it is to see that the speed laws receive the fewest possible fractures. As a result, they can form a pretty good idea of the course the minions of the law will pursue in a stated case, and govern themselves accordingly.

"It is not often that I take any chances when I am alone, or with only one person with me in the car," one of the fraternity remarked to a Motor World man recently. "It would be a cinch that the cops would run me in in short order. But if I have two or three passengers I am not apt to be molested.

"You see, it is this way. Every time a cop 'pulls in' a man for speeding and gets a conviction it is credited to him. But if he can't prove his case to the satisfaction of the magistrate and the prisoner is discharged a black mark is put against him. Now, suppose he catches me alone and runs me in; it then becomes his word against mine, and it doesn't take very long to tell what the magistrate will do. If, on the other hand, I have two or three witnesses who will testify that I was not going at twenty or thirty miles an hour, as charged, he would have only his bare word; and, while some magistrates would believe him if he said we were going one hundred miles an hour, others would hesitate.

"So, rather than run the risk of having an acquittal scored against him, he will let me go. I have been hauled up half a dozen times this year, and on more than one occasion I was going—well, pretty close to the limit. But I always got off with a 'I'll let you go this time, but be more careful in future,' from the officer, who saw that I had witnesses with me.

"The time I was 'pulled in' I was alone, and I'll swear I was not exceeding the legal limit. But the cop knew he had a cinch, and he ran me in. There was no trouble convicting me. The magistrate scarcely listened to what I had to say. He slapped a fine on me and turned to the next case in short order."

Arents Recovering; His Father's Gratitude.

George Arents, jr., who drove the Mercedes car which overturned and killed Mensel, the mecanicien, in the Vanderbilt Cup race, is much improved and on the way to recovery. His father has presented $1,000 to the Nassau Hospital, at Mineola, to which young Arents was taken after the accident.

Will Stump State in Motor Car.

Automobiles are to play a prominent part in the campaign to be waged by W. L. Douglas, the millionaire shoemaker, who is the Democratic candidate for Governor of Massachusetts. He will make a tour of many of the towns and villages in a motor vehicle.

To Test Tires and Oils.

Suggestions are already being made in regard to the 1905 British trials. Among them are competitions designed to show the merits of different tires and of various lubricating oils.

C. C. Worthington, president of the Worthington Automobile Co., returned from Europe on Saturday last.

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KISER NO LONGER KING

Is Decisively Beaten by Oldfield at Cleveland—New Figures Established for Standing Ten Miles

Looking not at all like a man who had announced his permanent "retirement" after the fatal accident which he was the cause of at St. Louis last August, Barney Oldfield made his appearance on his native heath on the Glenville track at Cleveland last Saturday, and was at least half the attraction of the meet. He set up new world's records for ten miles, from a standing start, and, incidently, smothered the aspirations of Earl Kiser, who for a short time had usurped the title of "King," which had been Oldfield's by popular acclaim.

Four thousand spectators turned out to witness the battle between Oldfield and Kiser, and they viewed with impatience the other contests which were run off between the two heats of the big match race. When the time arrived for the first heat of the match there was a lengthy discussion over the rules. It had been the general understanding that flying starts were to be used in all of the heats, but the racing committee had stipulated that one of the heats should be run from a standing start. It was decided to have the first heat, at ten miles, from a standing start, and the second, at five miles, with a flying start.

When the starting pistol was fired Oldfield's green machine jumped to the front and was at the quarter pole before Kiser could get the Bullet fairly under way. The track was fast, but rain had cut ridges in it in some places, and Oldfield's light car swerved on the turns, though the heavier Bullet was not troubled in that way. Kiser did not seem able to get the big Winton racer working properly, while Oldfield had no trouble with his new machine at all. Oldfield increased his lead with every mile, and won by almost seven-eighths of a mile.

The times for the ten miles was 9:17 1-5, which is 48 4-5 seconds faster than the former record, which was made by Charles Gorndt in the Winton Bullet No. 3 at the same track last August. The first mile was covered in 1:07 2-5, but the slowest mile after that was made in less than 56 seconds. The mile times were as follows: 1:07 2-5, 0:53 4-5, 0:53 3-5, 0:54 2-5, 0:55, 0:54 4-5, 0:54 1-5, 0:55 3-5, 0:53 3-5 and 0:54 4-5.

Oldfield's easy victory in the ten mile heat made him the favorite for the five-mile event, though both drivers were cheered heartily when they came out for the second heat. They rode slowly to the three-quarter pole, where they both put on speed and crossed the line well together. As they crossed the line and the starting pistol was fired, Oldfield again jumped into the lead, and at half a mile was more than thirty yards ahead. He kept on widening the gap between himself and Kiser, and at the end of five miles had a lead of a quarter of a mile.

Aside from the duel of the "Monarchs of Motoring," Webb Jay, and his White steamer furnished the most excitement of the day by emerging victorious in two races. Nor did Jay meet foemen in any way unworthy of his "steam," for in the first event he vanquished two cars of 24 horsepower and he took the handicap from five opponents.

The first event to be decided was a five-mile race for cars with not more than 24 horsepower, to be run with road equipment, though no passengers were carried. Webb Jay, in his White, was opposed by two 24 horsepower Peerless cars, driven by George E. Turner, of Pittsburg, and E. S. George, of Detroit. Turner took the lead at the start and kept it for the first two miles. When passing the grandstand, at the end of the third mile, Jay put on more power, and passed Turner, taking the pole at the quarter mark. Turner passed the White in the next mile and secured the pole again, but Jay took the lead on the backstretch of the last mile and won easily.

The five-mile handicap provided the most exciting competition of the day. In it were Charles Gorndt, with the Winton Baby Bullet at scratch; Carl Fisher, with the Premier Comet, who had received a handicap of 10 seconds but refused it and started from scratch with Gorndt; Joseph Tracy, with the Royal racer, 5 seconds; George E. Turner, Peerless, 20 seconds; Webb Jay, White steamer, 20 seconds, and E. S. George, Peerless, 35 seconds. After the first mile Jay was never in danger, though Turner gave him a good race. Fisher gave a fine exhibition with the Premier Comet, and, though he defeated Gorndt, the other scratch man, and George, the limit man, he finished fourth, Tracy and Turner defeating him, in addition to Jay. It was so late when the regular races were finished that the record trials were called off, though Carl Fisher drove one mile in the Comet in 1:01.

Summaries:

Five miles, 24 horsepower cars, road equipment without passengers—Won by Webb Jay (White); George E. Turner (Peerless), second; E. S. George (Peerless), third. Time, 6:36 1-5.

Ten-mile match between Barney Oldfield (Peerless Green Dragon) and Earl Kiser (Winton Bullet No. 2); standing start—Won by Oldfield. Time, 9:17 1-5. Time by miles, 1:07 2-5, 2:01 1-5, 2:54 4-5, 3:49 1-5, 4:44 1-5, 5:39, 6:33 1-5, 7:28 4-5, 8:22 2-5 and 9:17 1-5. Kiser's time, 10:12 2-5.

Five-mile open, stock cars stripped, 35 horsepower and under—Won by Burman (Peerless); Joseph Tracy (Royal), second; Webb Jay (White), third. Time, 5:37 3-5.

Five-mile handicap—Won by Webb Jay (White), 20 seconds; George E. Turner (Peerless), 20 seconds, second; Joseph Tracy (Royal), 5 seconds, third. Carl G. Fisher (Premier Comet), scratch, fourth; E. S. George (Peerless), 35 seconds, fifth; Charles Gorndt (Winton Bullet No. 3), scratch, sixth. Time, 5:40 2-5.

Five-mile match between Barney Oldfield (Peerless Green Draogn) and Earl Kiser (Winton Bullet No. 2); flying start—Won by Oldfield. Time, 4:43 3-5. Kiser's time, 4:59 2-5.

OLDFIELD RETAINS HIS SCALP

Reprimand will be Extreme Penalty Imposed for Duplicate Race Meet Entry.

Coming hot foot from Chicago last week, determined to rest only after the racing board of the A. A. A. had dealt out summary punishment to Barney Oldfield for his alleged breach of faith in not appearing at the Windy City meet on October 1, President John Farson of the Chicago Automobile Club departed last week in a chastened, even amiable, mood. He did not carry Oldfield's scalp back with him, and yet he was placated and almost ready to forgive the lapse of Oldfield so bitterly complained of only a short time before.

The change was brought about by interviews with Chairman A. R. Pardington and a calm and dispassionate examination of the evidence in the case. This showed that Oldfield was not to blame; or, if to blame at all, so little that his lapse was overshadowed by that of the racing board. The latter pleaded guilty to the charge of mixing dates and of having unwittingly granting conflicting sanctions to the Chicago and Pittsburg clubs. The mix-up occurred through the enormous pressure of work thrown on Chairman Pardington's office by the Vanderbilt Cup race. The mass of detail work entailed by that event was enormous, and during the trying time of dispatching it the sanction imbroglio occurred. By a curious coincidence a similar mix-up occurred between Oldfield and the Pittsburg promotors. A contract to appear at the Smoky City had been made in the summer, and while the dates were shifted around Oldfield's manager, not knowing that the same dates had been given to both cities, signed his principal to appear at Chicago. When it was seen that both meets would occur on the same day, and that only one of the two contracts could be lived up to, Oldfield decided to honor the older one by riding at Pittsburg.

To a Motor World man on Tuesday Chairman Pardington explained the situation.

"We got together last week, Presidents Temple of the Pittsburg club and Farson of the Chicago club, and myself, and thrashed the matter out thoroughly. Both gentlemen appreciated the strain and stress under which the racing board had been working, and evinced a disposition to make allowances and concessions. No official decision has yet been reached by the board, but there is every reason to believe that no drastic action will be taken. Oldfield and his manager appear to have acted without keeping in as close touch with each other as they should. That is really the extent of their transgression."

As a result of the canvass of the membership, there will be no fall tour of the Automobile Club of America; the opinions received made plain that there was no demand and little desire for anything of the sort.

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CLEAN SWEEP AT CLEVELAND

G & J Thread Fabric Tire Wins Every Event

AT CLEVELAND (OHIO) MEET, OCT. 15.

Five miles for cars up to 24 H. P.—Won by 10 H. P. White steam car; time 6:36 1-5.

Ten miles match race—Won by Peerless Green Dragon; time 9:17 1-5—World's Record.

Five miles for cars up to 35 H. P.—Won by 24 H. P. Peerless; time 5:37 3-5.

Five miles handicap, open—Won by 10 H. P. White; time 5:40 2-5.

Five miles match race—Won by Peerless Green Dragon; time 4:43 3-5.

Why the New G & J Tire is Fast.

The fabric used in this tire is woven with very strong threads running in one direction, with very light, soft cross threads about an inch apart. In building the tire, the several layers of fabric are placed on the bias, with rubber between each and every layer. The cross threads are made as light and as soft as possible, as their whole purpose is to hold the fabric in proper position until the tire is built. These cross threads have no strength whatever. The rubber between each layer forms a cell about each of the strong threads in such a way that when the tire is completed there is not one thread touching, or in any way chafing against any other thread, and each and every thread bears its full amount of the inflation strain. Where what is termed "square woven fabric" is used, the threads in each direction being of equal strength, there must necessarily be considerable friction at each point where one thread crosses the other, and in fast driving this constant friction develops considerable heat. With our new construction, there is no heat whatever developed except what is generated from contact between the rubber surface of the tire and the road; there is no internal heat. The heating of tires has been the most serious problem in tire construction. It has been one point which tire makers have heretofore been unable to overcome. The heating of the tires causes the rubber to degenerate, and to eventually disintegrate.

Our new tire is far speedier than any tire ever before used, and the exhaustive tests which we have made have proven that the tires are more durable than any ever before used. We feel that this new construction means a long stride in the direction of reducing the trouble and expense of tire equipment to lowest possible point.

Trade Mark.

G & J

G & J TIRE CO.

Main Office and Factory,

INDIANAPOLIS, IND.

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HUNTING BROUGHT UP TO DATE

Massachusetts Sportsmen Construct a Car in Which to Live While Seeking Game.

With a specially constructed body mounted on the chassis of a 16 horsepower automobile, Freeman N. Young, of Arlington, and Roy A. Faye and Dr. Albert H. Tuttle, of Cambridge, Mass., have begun a fifteen day hunting trip through New Hampshire and Maine. Upon the chassis Young and Faye have built a strong frame of wood, braced with steel rods, sixteen feet long, four feet ten inches wide and six feet high. For about four feet from the flooring the sides and part of the rear end are sheathed and painted terra cotta and then varnished. The roof is of waterproof carriage leather, and extends over the entire frame, the hood in front reaching a foot beyond the front wheels.

Hung from the frame, about three feet below the roof, is a 4x6 foot spring bed. The seat in front will accommodate three, and the bed may be reached from front or rear. Just in front of the steering gear is a curtain, which may be rolled down. A similar curtain at the rear converts the body of the vehicle into a cosy room, which is lighted by an incandescent elcetric light, the power being furnished by storage batteries.

Under the bed is a space three feet high, seven feet long and four feet ten inches wide, in which are stored an aluminum camp outfit, clothing, gasolene and provisions. There is also an electric heater, which may be used as a radiator to heat soldering irons or for cooking purposes in case of emergency.

It is the intention of the party to run night and day, one managing the machine while the other two sleep. As they travel they will select spots for camping when the roads are muddy. Meals will be obtained at farmhouses and hotels, or, when desired, can be prepared in the automobile. While the weight of the car is a little more than that of the regular body, no difficulty is expected in maintaining the speed of the car if the tires withstand the extra strain.

How to Detect Fake Platinum.

The principal metal used in the adulteration of platinum is silver, which does not alter its color, and even in the proportion of three parts of silver to one of platinum will stand the test of strong nitric acid if used cold. The only way of testing platinum is that which is used by refiners, i. e., boiling in strong nitric acid. Any one can do this by purchasing a small glass test tube. If the color of the acid is green after the boiling process it indicates copper as part of the alloy; the presence of silver is easily ascertained by putting common salt in the acid when cool. This throws down the silver in white flakes as chloride of silver.

Locomobile Used by the New York Fire Department.



Buying Cars for Japan's Army?

S. Ubikata, of Toronto, representing K. Ishikwa, of Yokohama, Japan, last week completed purchases which he has been making in this country for his principals. K. Ishikwa is an old established house, which for years was a large buyer of American bicycles, and of late it has turned its attention to automobiles. The latter are too expensive to be sold extensively in Japan, but a very fair trade in them is being built up.

That the war has not curtailed his purchases to any great extent was made plain by Ubikata's guarded remarks made upon leaving Toledo last week.

"Have I been buying motor vehicles for the Japanese government or for the use of the government in the present war?" he repeated. "Now, that is hardly a fair question to ask, and certainly I cannot answer it. The goods are bought here and sent to Ishikawa, at Yokohama, and there they are disposed of to those wishing to buy. I can say, though, that the war has not affected our business to any serious extent."

Motor Cars for Big Railroad.

The Union Pacific Railroad has been converted to the use of the gasolene motor, and, according to a dispatch from Omaha, orders have been placed for the construction of several cars for use on the local lines in Nebraska. The cars are to have a speed of sixty miles an hour, and will be large enough to carry thirty passengers.

During the period from August 11, 1903, until June 30 last, 852 persons in Washington, D. C., were granted permits to operate motor vehicles in the District.

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FOR FRIGHTENED HORSES

Owners of Automobile Held Responsible but Appeal is Lodged and Fight is on.

A pretty thorough ventilation of the rights of self-propelled and horse-drawn vehicles, and the liability for damages incurred by one or the other, is likely to be the outcome of a suit now in litigation in the Hartford (Conn.) courts, which is to be carried up to the Supreme Court of that State.

It appears that on August 3, 1901, while an automobile belonging to the Hartford Electric Light Company was being driven through Trumbull street, a pair of horses belonging to the Trout Brook Ice and Feed Company was standing in the street. The horses took fright at the automobile. They ran away and were injured. The company sued the Electric Light Company for damages, and Judge Coats, in the Court of Common Pleas, awarded the plaintiff damages of $325. The Electric Light Company took an appeal to the Supreme Court, and the appeal was argued in the session of the court last week.

On the trial before Judge Coats, it appeared that the horses were left unhitched and unattended by the driver of the team and the lawyers for the Electric Light Company claimed that this act on the part of the driver constituted negligence directly contributory to the injury of the horses, but Judge Coats overruled the claim.

It further appeared on the trial before Judge Coats that at the time the horses took fright the automobile was being driven by Walter S. Swindell, an employe of the Hartford Electric Company, who at the time was going home to supper, and the Electric Light Company claimed he was not then in its employ in the relation of servant to master. It peared that it was the duty of Maurice Cavanaugh, another employe of the company, to take the automobile to the power station on Kinsley street to have it charged. Swindell lived near the power station, and Judge Coats found from the evidence that Swindell often, at the request of Cavanaugh, drove the automobile to the station, and that he was in the habit of doing so was known to the company. The Electric Light Company further claimed that at the time of the runaway Swindell had not been created the agent of the Electric Light Company to take the automobile to the station, and that instead of performing the duty of the master, he with two other employes of the company was taking a pleasure ride.

Judge Coats held that Swindell was acting in the service of the Electric Light Company at the time the horses took fright, and gave judgment for the ice company. The questions of law outlined and other questions formed the basis of the company's appeal.

The Allegheny County Light Co., Allegheny, Pa., has purchased a 10-horsepower White touring car, and will use it in travelling from one plant to another on inspection trips.

Paraded for the "Drummers."

An automobile parade was held in connection with the United States Commercial Travellers' Exposition at Boston last Saturday. Machines of all sorts took part, although the short notice on which the parade was organized was responsible for the small number of competitors. The parade was reviewed by Governor Bates and staff, and also by Mayor Collins.

The prizes were awarded as follows: Gold cup for largest number of entries by one manufacturer, White Sewing Machine Company; gold and silver cup for the best display by any one manufacturer, Pope Manufacturing Company; gold and silver cup for most original feature, a Winton car containing a yak and a leopard from the jungle at the exposition; silver cup for best decorated touring car, Park Square Automobile Station; silver cup for the best decorated runabout, Rambler.

Motorphobes Show Their Teeth

Not deterred apparently by the farcical nature of their attempt to block the Vanderbilt Cup race, the People's Protective Association, composed of residents of Nassau County, L. I., at a meeting held last week, decided to enter the political arena and thus wreak their spite on the officials who opposed them in that matter. They adopted the following resolution:

"Resolved, That the members of the People's Protective Association will do all in their power to defeat the election of the present District Attorney for county judge; and also the members of the Board of Supervisors, should the latter come forward for renomination."

The friends of the officials named assert that they will see that the efforts of the association come to naught.

Harkness is Finally Suspended.

Harry S. Harkness has been indefinitely suspended by the board of directors of the Automobile Club of America, the specific offense being his record breaking trip from Boston to New York on June 19 last. His run was made on a Sunday, and his time for the 245 miles was 6:55:00. One of the officers of the club said that the action had been taken by the directors in keeping faith with the legislators to whom the club had pledged itself to do its part to prevent the violation of speed laws.

Scarritt Declines Re-election.

Winthrop E. Scarritt, president of the Automobile Club of America, has announced that he cannot be a candidate for re-election owing to the demands upon his time of his private business. Though the present one is his first term as the head of the organization, many of the club members had hoped that he would allow himself to be nominated for another year. James B. Dill, the well known corporation attorney, has been mentioned as his successor.

ITS BACKBONE WEAKENS

Untrue to "I Will" Spirit Chicago Club Surrenders—Only Three Members Resolute.

It transpires that the action of the weak-kneed members of the Chicago Automobile Club—who appear to constitute a majority of that organization—in making their peace with the Windy City authorities was taken in the absence of President John Farson, who was in this city attending the Vanderbilt Cup race. Knowing well that Farson, the man with both backbone and brain, was unalterably and vehemently opposed to unconditional submission—or submission of any kind—they seized the moment when he was out of town to make terms with the enemy. In fact, the flabby ones literally tumbled over each other in their eagerness to sign a pledge in which they agreed to henceforth be good and wear the much contemned numbers. The pledge referred to was drawn in a hurry.

Secretary Sidney C. Gorham of the Chicago club is the man who led the revolt against Farson. He recommended compromise, stated that a majority of the club was back of him, and promised that the club would make formal submission.

So it proved. When the directors met Farson and F. X. Mudd were the only members who held out against surrender. Both men stood by their guns to the last. Farson recorded his vote against surrender and then departed for St. Louis before the club meeting was held. Mudd, however, was even gamer, for he appeared at the meeting and spoke vigorously against withdrawing from the contest; in this stand he had one lone supporter, viz., A. E. Tripp, who also went on record against surrender.

With these exceptions, the 150 members present voted solidly to kotow to the city officials. No official action was taken authorizing the withdrawal of the pending injunction suit, but the members who were made parties to the bill were given permission to obey the ordinance by affixing tags to their machines.

Resolutions were adopted, after a long preamble, asserting that the club finds that "adoption of numbers and compliance with the terms of the numbering ordinance is expedient and advisable for the purpose of suppressing reckless driving and an unreasonable use of the streets of Chicago by irresponsible and inconsiderate automobilists."

With the club virtually abandoning the suit by agreeing to use the numbers, City Electrician Ellicott now will devise some other means of stopping scorching than by arresting drivers of all untagged machines as they enter the parks. He has the use of fifty automobiles pledged by the club, and he expects to make a sudden sortie on reckless drivers with a squadron of specially picked policemen, equipped with stop watches.

The club ended its session by deciding on a campaign with a view to increasing the speed limit and defeating the licensing ordinance.

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THERY ON ROAD RACING

Visiting French Crack Delivers Himself of Some Interesting Ideas and Opinions

Leon Thery, winner of the James Gordon Bennett Cup 1904 race in Germany, and George Callois, who was fifth in the French elimination trials for the James Gordon Bennett race this year and winner of the Gallion hill climb in 1902, were the guests of honor last Tuesday night at the Automobile Club of America, when the subject, "Automobile Racing in Europe," was discussed. Thery does not speak English, but his companion can express himself very well, and acted as interpreter for his more famous friend. The pair arrived in this country on La Lorraine last Friday, Thery coming here for the purpose of challenging the winner of the Vanderbilt race. Neither made a set speech, the information they gave being called out by questions from members of the club.

In contrasting the course over which the Vanderbilt race was run with the one over which Thery raced to victory in Germany this year, the Frenchmen declared that the American course is much easier than the one in Germany. The Long Island course is almost absolutely flat, while the one in Germany has three bad hills in each of the ninety-mile circuits. In another respect was the Long Island course easier than the German one, in that there are many straight stretches in the thirty-mile circuit, while straightaways were rare and of short length in this year's international cup race. They gave as their opinion that a careful manufacturer would construct entirely different cars for races over the two courses.

In the Vanderbilt Cup race the contestants had but three bad turns in each circuit, and they were all in the same general direction, while in the other big race turns of many different kinds and angles were constantly encountered. They said the difference could be best shown by saying that in the Vanderbilt race but two speeds need be used in gearing a car, while on the German course three or four speeds were absolutely necessary. The three worst hills in the German course were all encountered as controls were left, and it was necessary to set the brakes to avoid running backward while awaiting the timekeeper's word to start again. The three bad hills had grades of 15 per cent, and it was necessary to use the second speed in climbing to the tops of them. Even with the second speed the car would attain a rate of eighty kilometres an hour.

Thery said he would prefer to have long distance races run without controls. In answer to an inquiry if such contests would not be too hard on the drivers, he said that he thought such events were easier for the contestants than ones in which there were many controls.

When asked if he ever feared for his life, Thery smiled for the first time during the inquisition, shrugged his shoulders and said he never thought of it. To be a successful racing man, he said that one must drive as though he were the only man in the race. The others should never be thought of, as the more cool you were so much were your chances of winning multiplied. A racing man should give his entire thought to his car and only consider how he may obtain the most speed from it. If a driver fears he will be injured, he should never do any racing at all. As to danger from punctures or bursting tires, Thery did not seem to think much about it. The only chance for an injury, he declared, was if a tire were to explode when a car was rounding a turn at a high rate of speed. If such an accident were to happen on a straightaway road there would be no danger to a good driver.

The practice of allowing so many entries on a short course of thirty miles is a dangerous one, Thery thinks. He says that only expert racing men should be allowed in such contests. He pointed out that in the races for the international cup only three drivers from each country were allowed, which assured the presence of experts. In Europe this year three big road races have been run and no one has been killed. If there are twenty-five or thirty cars in next year's Vanderbile Cup race, a longer course than thirty miles will be absolutely necessary if accidents are to be avoided. Sufficient intervals should be allowed between the cars at the start, and five-minute intervals are better than intervals of but two minutes.

Thery said that it was no longer necessary for the mecanicien to hang out from the side of a car as corners were rounded, as the centre of gravity in modern racing cars is so low. Where formerly only the wheels on one side would be touching the ground when rounding corners at high speed, now all four wheels stay on the road. The main thing is to reduce the speed low enough that the corners may be rounded without skidding to avoid the great wear and tear on the tires when skidding. The limitations of tires were responsible for placing the weight limit of cars at 2,204 pounds, because if the racing machines were made any heavier no tires could be made that would stand the strain. If makers were allowed to increase the weight as they pleased, the result would be a lot of "monsters," as Callois called them, that would be only good for racing.

Thery is a powerfully built man of apparently twenty-five years. He has about as much of the proverbial French excitability as an ordinary cigar store wooden Indian. In a crowd he might be picked out as a centre rush on a college football team were it not for the small mustache he wears. He rarely smiles, but has a very pleasant expression. Callois is also a finely built man, and might be a model for a statue of a gladiator. In fact, both of them furnish strong evidence that all Frenchmen are not the puny creatures that so many writers would have us believe. They must return to France for the Paris show in December, but both of them hope to come back here in time to try for records on Ormonde Beach.

Thery has asked Manager Alfred Reeves of the Empire City track to give him an opportunity to meet some of the American drivers of racing cars. Both Thery and Callois had expected to give exhibitions at Brighton Beach on Saturday, but their racing machines will not arrive in this country in time for the race. Mr. Reeves told Thery that he would put on a series of races at the Empire City course on Election Day, November 8.

Dourdan's Much Diminished Glory.

Gone are the glories of the annual Dourdan record meet, its sensational speed flights a thing of the past. Time was when Dourdan was a name to conjure with, but the trials held there early this month attracted little attention, and the only additions to the record table were made in two motorcycle events.

After being postponed, the trials were held on Monday, October 3, on the famous Dourdan road, near Paris. The course was not in very good condition, and the best that the heavy racing cars—650 to 1,000 kilograms—could do was 0:25 1-5 for the flying kilometre and 0:52½ for the standing mile. Both these performances were made by Baras, who drove a Darracq car. The existing kilometre record is 0:21 3-5, made by Rigolly in a Gobron Brille car.

The motorcycle records referred to were both made by Lefranchi, in the class for machines under fifty kilograms. He reduced the flying kilometre record to 0:29 1-5, and the standing mile to 0:57 4-5.

New Body for the Nobleman.

There has been designed by the Paris firm of Kellner for an English nobleman a body which is described as a triumph of the coachmaker's art, as well as a type that is expected to meet with great popular favor during 1905.

It is a double phaeton "Roi des Belges" in form, though it possesses distinctive features of its own, principally in the shape of the side doors and back. It is painted white, and the inside cushions are covered with leather tinted electric blue. There is a removable hood, with side flaps, so that the benefits of a closed "voiture" may practically be obtained in a few moments.

"Twins" and "Triplets" in Tires.

One of the principal reasons why even solid rubber tires have proved unsatisfactory when fitted to vehicles carrying heavy loads was the rolling motion that set up with the progress of the vehicle, and especially in making turns. To eradicate this fault an English maker has introduced twin tires; the bulk of rubber in each tire is reduced, therefore the tendency to roll on the tire is less, and side slip is checked in its initial stages by the edges of the two tires instead of one. He has recently gone further and recommended and introduced triplet tires as being more economical than twins.

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When the Battery is Dying.

One of the most misleading and unaccountable faults which may happen, and which the novice may encounter on the road and have trouble in locating, is that due to using a battery which is almost exhausted. Such a battery will give just sufficient current to enable the motor to be started readily, and will run it without misfiring, but immediately the engine is put to drive the car by letting in the clutch, the engine slows down and stops. On fitting a newly charged battery the trouble is at once remedied. The cause of stoppage very much resembles that caused by failure, temporarily or otherwise, of the gasolene supply to the carburetter, only in this latter case some popping in the carburetter will be heard before the engine finally stops.

Believes in the Front Drive.

Another believer in the theory that front driven cars are less liable to side slip than the regulation rear driven type is the Marquis de Chasseloup-Laubat, the well known French motorist. He also says that when completely locking the wheels the tendency to side slip is more considerable than when they are only partially locked. It is, he says, a grave error in driving to completely lock the wheels, even if it is a question of stopping as rapidly as possible.

F. P. Wonson, of Gloucester, Mass., will erect a building to be used as a garage, and equip it to repair and store automobiles.

The Value of the Sponge.

A good sponge, like a good brush, has a value to the carriage painter unexplained by the price paid for it. Nevertheless, a really good sponge has been an exceedingly difficult item of paint shop supplies to obtain during the last eighteen months. The complaint has been universal the country over, and the class of sponges reaching the average paint shop at a price per pound of not less than $1.50 has been of a quality to make a righteous man grieve. The carriage painter may not be deeply interested in ascertaining from whence the sponge supply is obtained, but of all men he is instantly alive, or should be, to the importance of carrying in stock sponges suited to his work.

A soft, fleecy wool or velvet sponge, tough and strong in texture, with a generous water carrying capacity, and quite free of minute shells and foreign accumulations, is the desired quality for carriage work. At a considerable advance in price, such sponges are the most economical to buy. All sponges should, as a matter of preservation and increased usefulness, be kept in dustproof compartments, and after use they should be thoroughly washed before laying away.

Some glues bear more water than others. Those glues which absorb most water are the best and make the very best glue joints. For glue to be at its very best, it is necessary that it should penetrate the pores of the wood, the more penetration the more substantial the joints.

Lubrication of the Crank Case.

After every five hundred miles of running it is advisable to examine the state of the crank chamber. If the oil in it is thick it should be drained off. It need not be thrown away, but if carefully filtered it can be used for filling axle boxes and large bearings. It must not be used again in the engine.

It is an excellent plan to fill up the crank chamber to the normal level with kerosene, run the motor for a few minutes and drain off. Kerosene will thoroughly clean out all the bearings. Generally speaking, the oil in the crank chamber should reach just above the lower nut securing the big end bearing. Before filling up the crank chamber with fresh oil, let the kerosene thoroughly drain out.

Advance of the Bucket Seat.

Even carriage makers, who are not inclined to look with partial eye upon automobile innovations, commend the bucket seat. Unknown to the carriage trade, it early made its appearance on automobiles, and while at first designed for racing cars, it soon found a place on touring cars and even runabouts. Snugly ensconsced in its capacious depths a driver may devote himself to the task of piloting his car without giving a thought to the security of his seat. His vis-a-vis—if he has one—never crowds him, nor does the absence of one affect him.

That Wonderful World's Eclipsing Flight

of Oldfield in the Peerless Green Dragon at Cleveland, Oct. 15th, was achieved with the aid of

G & J THREAD FABRIC TIRES

Ten Miles in 9 min., 17 1-5 sec.

First mile (standing start),	1.07 2-5	Sixth mile,	.54 4-5
Second mile,	.53 4-5	Seventh "	.54 1-5
Third "	.53 3-5	Eighth "	.55 3-5
Fourth "	.54 2-5	Ninth "	.53 3-5
Fifth "	.55	Tenth "	.54 4-5

G & J THREAD FABRIC TIRES make slow cars fast, and fast cars faster. Results prove it.

G&J TIRE CO. INDIANAPOLIS, IND.

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TO ENCOURAGE TOURING CARS

French Promoters Grow Wise and Hedge Hill Climbing Contests With Restrictions.

Two great French hill climbing automobile races have yet to be run—Thierry and Gaillon—before the close of the season. Contrary to precedent, these trials will not this year be open to tourist and speed cars simultaneously. With the fast cars of to-day the hill of Chateau-Thierry would be dangerous and almost impossible, so that it has been decided to restrict the Chateau-Thierry race to touring cars, and the Gaillon to the speed tests. The Gaillon is a fine straight line, with no dangerous turnings like that of Chateau-Thierry.

The touring car race at Chateau-Thierry—a mile race—will take place on October 23. The motor cars will be classified according to the price of the chassis. First, open bodies; second, bodies completely covered. The price classification of the cars will be as follows: 1, chassis of less than £160; 2, chassis of less than £320; 3, chassis of less than £480; 4, chassis of less than £720; 5, chassis of less than £1,000; 6, chassis of less than £1,400; 7, chassis of more than £1,400.

The organizers, wishing to make of this a practical race, will thoroughly examine the competing vehicles to insure that real tourist cars are presented, and not racing cars rigged up with a more or less comfortable body. Each competitor must also produce a certificate from the maker certifying the cylinder capacity of the car and that it conforms with the commercial pattern. The maker will bind himself to sell similar cars at the same price. Under these circumstances it will be impossible to present a 40 horsepower as a 24 horsepower.

Lastly, in order to encourage the production of real touring cars, a committee will, before the race, award a special prize to the car which in each class appears to them to present the finest effect, both from the point of view of comfort and elegance. This prize will only be awarded if a winning car is classed in one of the categories.

Objecting to Spiked Tires.

The Board of Freeholders of Somerset County, N. J., will make an effort to have the next legislature enact more stringent laws for the regulation of automobiles on county roads. Complaints are reaching the Freeholders from all parts of the county that the macadam roads are being injured by the armored tires that are now being used on a number of the big cars. These tires, which are warranted not to slip, have steel spikes fastened to a heavy leather strap, which is vulcanized on the face of a rubber tire. When travelling at a high rate of speed these machines tear up the macadam roads. A number of roads in Bernardsville have been seriously injured, and it is presumed that the wealthy colony there has adopted the armored tires.

Adds Course of Automobile Study.

An automobile course of study has been established by the Cleveland (O.) Young Men's Christian Association. This course has been added to the scholar's curriculum on account of the success attained and the interest shown in the series of eight lectures given by the association last spring.

It is the object of the course to give a great deal of practical work in the way of assembling, repair work, and actual road practice. The elementary work will consist in the theory of the one, two and four cylinder, the carburetter, igniter transmission, gear and other accessory parts of the automobile. At different stages in the explanation of these parts, demonstrations will be involved. The advance work will be for machinists and draughtsmen who wish to study the construction and repair of machines.

Lectures will be given at the Y. M. C. A. building, while the practical work will be done at the Automobile Garage and Repair Company's, No. 404 Huron street.

Springfield Arranges for Instruction.

For the benefit and instruction of members of the Springfield (Mass.) Automobile Club, a series of meetings has been arranged, covering the details of construction of all standard makes of automobiles. The Knox Automobile Company has offered the use of its factory for an evening, and competent men to explain the construction of the different parts. The Springfield Automobile Company will also throw open its show for one night to allow the members to thoroughly inspect the Locomobile touring cars. A. A. Geisel will entertain the club in his automobile headquarters in Dwight street and show the Winton and Cadillac machines and Whitten & Clark will show the Oldsmobile and Autocar.

It is hoped to give the members a thorough working knowledge of automobile construction in these informal meetings.

Declares Six Mile Limit Unconstitutional.

Judge O. E. Heard, of Sterling, Ill., sitting in the Circuit Court, has declared a Dixon, Ill., city ordinance limiting the speed of automobiles to six miles an hour invalid and unconstitutional, and reversed a police court decision fining a speeding chauffeur $20. He declared the law void because unreasonable and oppressive, tending to create a monopoly in favor of means of travel. He intimated that an ordinance making the limit greater would be valid.

Detroit's Class Studies Steam.

Steam power for automobiles, with a White car as a model, was discussed at the last meeting of the Detroit (Mich.) Y. M. C. A. automobile instruction class. Instructor E. J. Stoddard described the working parts of this car as well as the principle of operation. Up to this time very little has been told of the steam machine in the class, the greater part of the study being given up to gasolene cars.

FOR VON HERKOMER'S CUP

Competition Postponed Until Next Year—Artist Donor With Paint Each Winner in Oil.

Gold and glory in almost equal portions will be the reward of the winner of the von Herkomer Cup, which will be competed for next year for the first time. The cup itself will be chased by Hubert von Herkomer, the celebrated artist, while its winner will be honored by the donor of the cup, who will paint his portrait in oil. As von Herkomer portraits are worth $20,000, this souvenir will possess rare value.

The von Herkomer Cup is offered as a prize in an international competition for touring cars. It was originally intended to inaugurate these competitions this year, but, owing to the lack of time for arranging the preliminaries it was put over until next year. The cup is to be worked in silver and enamel by the artist's own hands, and not only will have a high material worth, but will also be a highly valuable piece of art.

The prize cannot be competed for more than five times. Those winners who lose the prize again will receive special prizes, such as, for example, a special prize which has been offered by Dr. Magin, of Paris, worth M. 2,000 ($1,000).

The first competition will take place in Munich.

The Mayor's Heart-to-Heart Talk.

Mayor Raymond of Aurora, Ill., has adopted an unusual way of enforcing the ordinance in that city regulating the speed of automobiles. He recently called all the owners of these machines to his office for a general conference, and had a heart-to-heart talk with them regarding the law. The Mayor impressed upon his visitors the fact that the ordinances would be strictly enforced, and before the talk had ended had created a profound impression in them inds of his hearers.

The Up-to-date Orchestra.

Franklin, N. H., has an orchestra which travels from town to town in an automobile. The car is owned by and operated by Bradbury M. Prescott, jr., the director of the orchestra. It is a fast running vehicle, and has repeatedly carried the five men of the orchestra to Tilton, Bristol, Boscawen and other places, in what would seem lightning-like rapidity, when compared with the common methods of transportation over these highways.

Malone Sets Absurd Limit.

The village trustees of Malone, N. Y. have an ordinance restricting the speed of automobiles in the street to six miles an hour, and also requiring owners of automobiles which are kept for hire to pay a license of $10 a year and file a bond of $1,000 to secure the village against loss on account of claims for damages caused by automobiles.

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Oshkosh Contributes a Ruling.

An unsatisfactory ending came last week to a case in the Oshkosh (Wis.) Municipal Court, in which the constitutionality of the local automobile ordinance was raised. The court failed to convict the motorist, on the ground of insufficient evidence, but it declared that the ordinance was constitutional, and stated that it would fine any offender against whom the evidence was clear.

The case was that of the city of Oshkosh vs. W. J. Campbell, the latter being charged with violation of the ordinance regulating the speed of automobiles. The defendant claimed that the ordinance discriminated in that it does not provide also that horses and carriages may not pass around corners at a rate of more than four miles an hour. The brief filed was exhaustive and comprehensive.

Judge Goss, in his opinion, said that he believes the ordinance is valid and does not discriminate, as claimed by the defence, as it provides for the regulation of all automobiles. There are features connected with the operation of automobiles which do not obtain with other vehicles. Horses do not travel at a rate of speed from thirty to fifty miles an hour, and the fact that bicycles and baby buggies, as well as horses and carriages, are not amenable to the same ordinance is not in itself a discrimination under the existing conditions.

The court said that he should enforce the ordinance, and, believing it legal, will pronounce sentence under it upon convictions found in his court.

To Institute "Religious Crusade."

James M. Little and J. Dwight Hogaman, who are said to be well known evangelists, of Toledo, Ohio, started last week on their evangelical tour of the world, to which they have attached the high sounding title of the "Automobile Religious Crusade." They began their labors in St. Louis, and will tour the Southwest, and expect to be back in Toledo next June.

Their trip will really not be entitled to the "automobile" part of its name until they leave Toledo next summer, as until then they will do their travelling by railroad.

Where "Slow Downs" Will Rule.

Chief Murphy, of Bay City, Mich., has been instructed by the Police Commission of that city to check reckless automobilists and make them conform to the ordinance. The commission adopted a resolution at its last meeting asking the Council to amend the present ordinance so that automobiles be compelled to slow down to three miles an hour when rounding corners, and that the slowing down must be commenced one hundred feet from the corners.

Queens Gets a Motor Ambulance.

The Health Department of Queens Borough, Greater New York, is contemplating great distances required to be covered entails too much work on the horses in use at present.

Accident Constituted "Wilful Assault."

Injuries resulting from disregard of the laws governing the speed of automobiles shall be sufficient ground for the recovery of damages, according to a verdict which has been returned by a jury in the Supreme Court at Ballston, N. Y.

The case in point was that of Charles Clement, a farmer, against Milton C. Hastings, a chauffeur for Edward Murphy, jr. Clement alleged that Hastings collided with his team, that the automobile was being driven at a reckless rate of speed, and asked that he be awarded damages for the injuries sustained as a result of the collision. In charging the jury Justice Spencer said that if Hastings was driving the machine at a rate of speed demonstrating reckless disregard of its proper use and was wantonly indifferent to the consequences that might happen to others, the act constituted a wilful assault on Clement and his property, and entitled him to damages.

The jury returned a verdict awarding the plaintiff damages in the sum of $600.

Here's a Deer Story.

One of the latest victims of the sustained speed of which an automobile is capable was a deer, which lost a long race for its life near Willows, Cal. Two men were riding in an automobile along the road near Jacinto when they saw a deer jump over a barbed wire fence and run along the road ahead of them. They gave chase, and, though the deer gained at first, it finally fell exhausted at the roadside, where it was killed by some hunters from the next town.

And Now the 'Possum Hunt.

A 'possum and 'coon hunt by automobile is the novel entertainment planned by the Houston (Tex.) Automobile Club. The hunt will be made by starlight, the party proceeding in automobiles to the woods near the rice farm of one of the members. Acetylene gas lamps taken from the automobiles will be used to search out the toothsome animals, and hounds will be there to run them to earth.

Exacts Numbers, but No Fee.

An automobile ordinance is engaging the attention of the Nashville (Tenn.) Council. As amended at the suggestion of the Nashville Automobile Club, it is a fairly innocuous measure. No speed limit is imposed, but each automobile is required to carry a number plate bearing figures three inches high. A penalty for non-compliance is provided, but there is no fee imposed for registration.

Excludes Automobiles from Public Road.

Haughtily disdainful of constitutions and statutes, the County Court of Grant County, W. Va., considered the best touring county in the State, has passed an order prohibiting automobiles running in the county. This action is the result of a number of accidents because of alleged reckless automobile driving. A penalty of $100 is named for violation.

Arkansas Applies for an Injunction.

M. F. Collier, a prominent citizen of Paragould, Ark., has applied to Judge Hughes, of the circuit court, for an injunction restraining the operation of an automobile on the streets of that city, on the ground that such a machine is dangerous to human life.

A horse pulling Mr. Collier's family surrey was recently frightened by Eugene Smith's automobile, with the result that the vehicle was overturned and the occupants injured. Hence the indignant Paragould man's action.

Commenting on the application, the Little Rock Gazette very sensibly says:

"We don't know what Judge Hughes will do about this application, but we do know that the automobile has come to stay and that it is going to increase and multiply. When bicycles were first generally ridden horses used to get conniption fits at the sight of them, but now a horse does not notice one of the man-propelled things. It will be the same way with the automobile. Horses will frighten at them for a while, but in the course of time this fear will be removed and horse and automobile will travel the same road together in peace and quiet.

"And by the time horses have gotten thoroughly broken to automobiles the flying machine may have been perfected to a point where it can be used to frighten the animal motors of terrestrial traffic."

Sacramento Wants Larger Tags.

The City Trustees of Sacramento, Cal., are considering a plan to make all automobiles carry large number tags so that they may be readily identified in case of an accident. One of the trustees is in favor of the plan, and proposes to also make visitors secure tags before being allowed to use the streets.

Anti-Horse Thieves Adopt a Resolution.

The National Horse Thief Detective Association, in convention assembled recently at Logansport, Ind., rose in all the majesty of its many syllabled title and adopted a resolution authorizing its national president to draft a law asking the Indiana Legislature to regulate the speed of automobiles.

Bryan's Baliwick Begins Legislating.

An ordinance has been introduced in the Lincoln (Neb.) Council requiring all automobiles to carry numbers, that they be restricted to nine miles an hour and five miles when rounding corners, and be made to carry lights at night and bells or horns to warn pedestrians.

Eu Claire will be Liberal.

City Attorney Wickham of Eu Claire, Wis., has been instructed by the council to prepare an automobile ordinance. It is expected that a liberal speed limit will be fixed; twelve to fourteen miles an hour is suggested.

To October 1 the Connecticut Secretary of State's office had registered 2,406 motor vehicles.

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PREPARING FOR COLD SNAPS

Some of the Things That May Be Done to Prevent Damage—Warming the "Stable."

Frost has already made its appearance on several occasions, and in a very short time freezing weather may reasonably be looked for. Motorists should therefore be on the lookout for sharp snaps, especially on fine, cloudless nights. After the long spell of warm weather such precaution might be considered unnecessary, but that is where the damage to the cylinders and radiators lies, as one is apt to ignore the signs and tokens of approaching severe weather.

In the case of the more affluent motorist who can afford to fit up the motor house with special warming apparatus no trouble need be feared, and in some cases a branch pipe can be run with little expense from the greenhouse heating system, or a slow combustion stove be fitted up under a galvanized iron cover immediately outside the house, and the flue taken through it, the products of combustion being expelled where it passes out at the other side of the building. It is not necessary to obtain a high temperature, for so long as it is kept two or three degrees above freezing point there is no danger of freezing up the water circulating system of the car. The use of oil or gas stoves is not to be recommended in motor houses, as if there is any leakage of gasolene the vapor is likely to become ignited and cause damage to the car and house.

Where the motor house occupies a sheltered position, and the temperature hovers about freezing point, a good thick sack or rug may be thrown over the radiator and bonnet; this will prevent a rapid fall of temperature, and in most cases prevent the freezing up of the radiators, although it is not absolutely infallible. As but a small quantity of water is now carried in most types of cars, there is very little trouble involved in running off the water every time the car is to stand for any period, so that perfect safety is insured.

The Brazing of Joints.

There seems to be some misunderstanding in connection with the belief that joints in the pipework of automobiles break at the terminal collars, owing to neglect in annealing after brazing. A brazed joint is the softest place on a pipe, but it should be the strongest provided it has been properly brazed, and not burned by being overheated while brazing. Another defect, and not an uncommon one, is the unsuitable material that is used for brazing purposes. Unfortunately, the most common defect about motor car pipework is the scarcity of practical workmen—men who understand what a brazen joint should be when done properly, and that it does not require annealing. Ninety-nine out of every hundred so-called pipe braziers know very little about a sound brazed joint on brass or copper pipes, let alone if the pipes are of suitable material for brazing, and whether they will stand the work which the joints are expected to stand. Slack fitting unions with coarse threads are a great source of annoyance on most cars, and no union joint is reliable that has a greater pitch of thread than nineteen or twenty threads to the inch. The male end should have a good shoulder, and the nut should have a correspondingly good collar inside and be a good fit on threads from top to bottom.

Two Evidences of Inaptness.

One occasionally comes across car owners of some experience—men, too, who affect to be particularly keen upon mastering the technique of their automobiles who have not acquired such rudimentary skill as is involved in changing gears without looking down to see when the level is alongside a notch in the quadrant. It may be excusable for absolute beginners to do this, but it is an extremely dangerous practice when driving in traffic to take one's eyes from the road in order to look down at the quadrant when changing gears. Particularly at night time should the practice be avoided, so that the dodge of rigging up an electric lamp in a position where it will illuminate the quadrant must be regarded as the invariable sign of the clumsy beginner.

Another little item of great importance which is often overlooked has relation to the adjustment of drip lubricators. The practice is too common of leaving these appliances just as received from the makers, with the result that the frequency of the dripping varies in accordance with the viscosity of the oil used. A lubricator may be set to accurately supply a sufficient and not excessive quantity of one particular kind of oil, but when upon a journey some different brand of oil may be purchased, which will not drip through the orifices of the lubricators with anything like the freedom of the oil for which the lubricators have been adjusted, with the result that the engine receives an inadequate supply; or an oil of a much lighter body may be purchased which will drip through so rapidly as to smother the sparking plugs and valves.

To Grasp the Starting Crank.

In the hands of inexperienced or careless motorists the starting crank is a real peril. Within a week or two an ex-Secretary of the Navy had his arm broken in two places, while a Philadelphia motorist who was driving the Archbishop of Canterbury suffered a fracture of the wrist, both accidents being dut to the recoil of the crank.

If motorists would be exercise a little care such mishaps as these would not occur. There is a right as well as a wrong way to grasp the crank handle, for example. The right way is to hold it so that the knuckles will be under the handle and the arm out of range of the latter in case it should unexpectedly fly back. If this is done the fingers will involuntarily unclasp sufficiently to release the handle, which will then swing around without doing any damage.

VAN WESTMAN ON DUST

Whilst Tooting His Own Horn He Deals With the Subject Interestingly and Instructively.

One of the topics which was discussed at considerable length at the recent German automobile Congress, held at Breslau, was that relating to dust on roads. An exhaustive paper on the subject was read by Herr L. Van Westman, the inventor of the dust preventive, of Westrumite, in which he adduced proof in support of his contentions that this substance when applied to the roads injures neither rubber tires nor the varnish on vehicle bodies and other parts. Excerpts from the paper are appended:

"I believe that if it were possible to make streets entirely dustless the lives of millions of unfortunate consumptives might be saved. The material damage caused by dust to furniture, machinery, provisions, etc., is impossible to estimate.

"Furthermore, real estate located on roads with much traffic depreciates in value in the course of time on account of the dust nuisance. The dust produced by the increasing traffic deprives many otherwise fine resorts of the advantage of a pure atmosphere. On the Riviera, for instance, it may be observed that trees and plants far into the gardens are entirely covered with a gray coat of dust. The pleasure drives, which were formerly so popular, have been almost entirely discontinued because it is no pleasure to drive in a dense cloud of dust. As the dust is largely a portion of the street material and the latter is reduced by its removal, it follows that any process for binding the dust will tend to preserve the road surface. When this fact is once thoroughly understood by the authorities, we may hope to see the dust disappear from the streets within a definite time. Too much cannot be said against the practice of sprinkling streets with water, quite common everywhere, because water spraying loosens and destroys particularly macadamized streets, and produces a soft mud which may prove very dangerous to automobiles and horse riders, and the removal of which is expensive.

"The widespread impression that dust is produced only through the wear of the surface layer of the street is entirely wrong. By far the greater portion is due to the fact that the pressure of traffic forces the heavy stones down into the road and allows the lighter material, sand pulverized to dust, to rise, from which result the holes in the street surface which are a source of expensive repairs. The abatement of the dust nuisance may practically be divided into two parts, viz.: (1) The suppression of dust on the surface; (2) binding the paving material either during construction or during repairs. The first operation consists in sprinkling the streets with suitable fluids. We need, how-

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ever, not delude ourselves that the nuisance will be obviated by this means to any extent, because only the cities which dispose of large appropriations for street watering purposes are able to take up this problem, they spending a great deal of money in keeping the streets sprinkled, and by using suitable dust binding fluids they might save sufficiently on wages that the introduction of the improved method would only occasion a very slight increase in the annual expense account.

"I now arrive at the second question, which will be of much more interest to automobilists: How can country roads be rendered free from dust? Theoretically this end may be accomplished by the same means by which city streets are kept dustless, but practically these means are inapplicable, because the provincial authorities concerned can hardly be expected to make the necessary appropriaations. The only way of accomplishing any beneficial results is to improve the methods of road construction. With the present method of building highways, which consists in compressing stone and sand with water by means of steam rollers, there can be no possibility of binding these materials together. Traffic will in time pulverize the sand and force it to the surface, with the result that the road is not very dusty, but also in need of repairs.

"It will hardly be possible to use other materials than oil and tar for binding dust, for the simple reason that there are no other materials of equivalent effectiveness which are to be had as cheaply as crude oil and tar. All the experiments have shown that oil and tar have a very powerful binding effect, if it is only possible to completely saturate the sand and stones with them. The methods just described are, as stated, too bothersome, expensive and dependent on weather conditions, and require that streets treated must be closed to traffic for long periods. There is, however, a very simple method of securing the full benefit of the properties of tarry and oily substances and avoiding their disadvantages, and this method consists in making these substances soluble in water, in which case they will be eagerly absorbed and strongly bind the street paving material into an elastically compact mass. The solutions may be spread on the roads by an ordinary sprinkling wagon, and if the work is done at night the streets need not be closed to traffic. Care must, of course, be used that the oil or the tarry emulsion becomes insoluble after the evaporation of the water, because otherwise it would be dissolved and washed away by the next rain. The insolubility must, however, not be so complete that the substance is entirely incapable of absorbing water, but it must always retain the property of taking up enough rain water to bind any new formed dust. This is the only means of preventing the production of mud, as the rain not absorbed will quickly run off, and the rest form an emulsion and bind the dust.

"Practice has proved that roads thus treated dry much quicker after a rain than ordinary roads, and that there is no formation of mud, as in case of water sprinkling or after a heavy rain. Now, if in the construction of a new road, either macadam or stone pavement, all the sand employed is saturated with this emulsion, it is bound together so effectively that it is impossible for the pressure of traffic to force it to the surface, and this already results in a considerable reduction of dust, as the production of dust by the wear of the upper surface, especially from automobile traffic, is very small. The development of dust through automobiles does not result from the wear of the stones contacted—the tires being entirely too soft to produce any wear on stones—but results from the vacuum formed behind the contact of the wheel with the road surface, which sucks the sand from between the stones no matter whether it is a macadam or stone paved road. If, with the increasing automobile traffic, especially on the country roads, no efforts are made to provide an efficient binding material, it may be predicted with assurance that in future the life of the roads will be greatly reduced, because the extraction of the filling material sand from between the stones will naturally ruin a road much quicker than the surface wear from horsehoofs and iron tires.

"There is at present certainly no longer the least doubt regarding the rapid introduction of automobiles on a large scale, consequently the authorities intrusted with the care of the roads must get used to the idea that they have to count with motor cars as a factor entitled to the use of the roads. The latter exist for traffic purposes, and in case the means of traffic are changed the roads must be made to conform to the new requirements. Many rural and urban authorities have already begun to replace the otherwise very satisfactory macadam pavement with stone pavement, because it is more resistant to heavy traffic. But from the standpoint of the public this is very much to be deplored, because the stone pavement has not only the disadvantage that it disables horses in short order, but also causes much annoyance to every one using the road or living near it, owing to the great noise produced. Besides, it is not exactly a pleasure to drive over such a pavement, whether with an automobile, bicycle or horse drawn vehicle, in case it is not absolutely uniform. This much to be desired uniformity will, however, hardly ever be secured on a country road. Automobilists are, therefore, much interested in the retention of macadamized roads; only they should be made dust free and durable, because the dust and the many holes are the great disadvantages of a pavement which otherwise combines all desirable qualities, being almost noiseless and much more uniform than stone pavement.

"As it has frequently been claimed that Westrumite has an injurious effect on the varnish of carriages I would like to present an opinion from the noted chemist Dr. C. Bischoff, of Berlin. In connection with this opinion, I would remark that it is, of course, to be recommended to drive slowly over a road only recently treated. This is a matter of little moment, as the drying requires only a few hours, so that there can be no question of traffic delay. Fears have also been expressed that Westrumite might be harmful to rubber tires. I have before me a letter from Herr Tischbein, of the Continental company, which is to the effect that these fears are unfounded. The Cyclist Touring Club, in Holland, has made extended experiments at its own expense in different cities, and sent a report to the Mayor of Nymegen which was entirely favorable to the use of the emulsion. According to these several statements, it is shown that (1) Westrumite binds the dust and does not occasion too great expense as compared with water sprinkling; (2) no mud is formed during rain; (3) it does not injure the varnish of vehicles; (4) it has no injurious effect on rubber tires, but, on the contrary, preserves them; (5) it has an appreciable saving and preserving effect on roads; (6) it kills weeds, but has no bad influence on trees, bushes or other plants."

Explosions in Exhaust Box.

The motorist who is his own mechanician frequently experiences considerable perplexity by reason of the eccentric behavior of his foot brake, which will one day act with disconcerting fierceness, and the next fail to exercise any retarding influence upon the car. The explanation usually is that oil has got splashed on to the foot brake; but sometimes it happens that the most scrupulous cleanliness fails to make a brake bite, or, on the other hand, liberal lubrication of oil fails to make a brake act with the smoothness that is desirable. Roadside adjustments frequently result in accentuating the evil. The latter state of affairs is usually occasioned in the case of foot brakes of the most frequently adopted pattern by ignorance of the circumstance that there are two separate adjustments possible, in addition to the adjustment of the rod immediately connected to the pedal lever. One adjustment is in the long horizontal rod which passes back under the footboard to the brake band; the other adjustment is on a short rod attached to the brake band itself. To make the action less fierce, the adjustment of the short rod should be lengthened out, and the adjustment of the long horizontal rod should be tightened up, which will enfeeble the action of the brake; and, per contra, to make the brake act more vigorously, the long horizontal rod should be lengthened out and the short rod on brake band should be further attenuated.

The Components of Westrumite.

Most people have heard of Westrumite, the dust-laying preparation which has been much used abroad, but few know what it is made of. This material is a brownish liquid, containing 60 per cent of crude petroleum, 34 per cent of ammonia and some other chemicals more or less optional. Leonard Schade Van Westrum, of Berlin, is the inventor. When ready for use it is mixed with from nine to eighteen parts water and sprinkled over the streets.

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The Week's Patents.

771,631. Igniter for gas or gasolene engines. Peter P. G. Hall, jr., Philadelphia, Pa. Filed November 19, 1902. Serial No. 131,921. (No model.)

Claim.—1. An igniting device comprising a tubular plug adapted to enter the wall of an engine cylinder and formed with an enlarged chamber communicating with its bore exterior of such cylinder, a firing pin passing through said plug, its uncovered inner portion being spaced away from the walls of such bore, a body of insulating material interposed between a portion of said pin and the wall of said chamber and between said insulating body and the end of such bore.

771,651. Wheel. Edward S. Lea, Rutherford, N. J. Filed January 16, 1904. Serial No. 189,298. (No model.)

Claim.—1. In a wheel, a tire comprising a plurality of sections pivoted directly to the rim of the wheel, each section being independent of the other sections, and means to cushion each section against the rim.

771,674. Fastening device for pneumatic tires. Thomas Sloper, Devizes, England, assignor to Christian Hamilton Gray, Silvertown, Essex County, England. Filed March 12, 1904. Serial No. 197,867. (No model.)

Claim.—1. In a tire fastening device the combination of a wheel felly, a metal band secured to the periphery of the felly and projecting laterally beyond the same, each lateral projection having a longitudinal groove on the inner side, detachable annular side plates one on each side of the felly and projecting from the same toward the lateral extensions of the peripheral band, these projecting portions having each a longitudinal groove on that side toward the band, a double bead to each edge of the tire cover adapted to lie in the space between the felly and projecting portions of the band and side plates while the bead enters the grooves, and means for holding the annular side plates in position, substantially as set forth.

771,683. Electric ignition device for internal combustion motors. Charles W. Svenson, New Britain, Conn., assignor to the Corbin Screen Corporation, New Britain, Conn., a corporation of Connecticut. Filed June 17, 1903. Serial No. 161,829. (No model).

Claim.—A spark plug of the character described, comprising a relatively stationary annular member, a rod mounted longitudinally thereof, and a revoluble disk having a plurality of sparking points carried at the outer end thereof adjacent to the annular terminal.

771,947. Vehicle tire. James A. Swinehart, Akron, Ohio. Filed November 23, 1903. Serial No. 182,258. (No model.)

Claim.—1. The tire and a core therefor adapted to be changed in character by the application of heat, and means within said tire to heat said core, substantially as described.

771,985. Carburetter for gasolene engines. George Kingston, Kokomo, Ind. Filed August 12, 1903. Serial No. 169,283. (No model.)

Claim.—1. In a carburetter, a mixing chamber having inlet and discharge ports and provided at one side with an opening, a ported valve arranged within the mixing chamber, a gasolene supply pipe extending within the valve, and a removable nozzle member extending through said opening to the gasolene supply pipe, said nozzle member having its outer end closed and being provided with a port for discharging a spray of gasolene within the mixing chamber.

772,030. Apparatus for loading motor vehicles. George H. Condict, New York, N. Y., assignor, by mesne assignments, to Morton Trust Company, trustee, a corporation of New York. Filed January 3, 1899. Serial No. 700,898. (No model.)

Claim.—1. The combination with a vehicle

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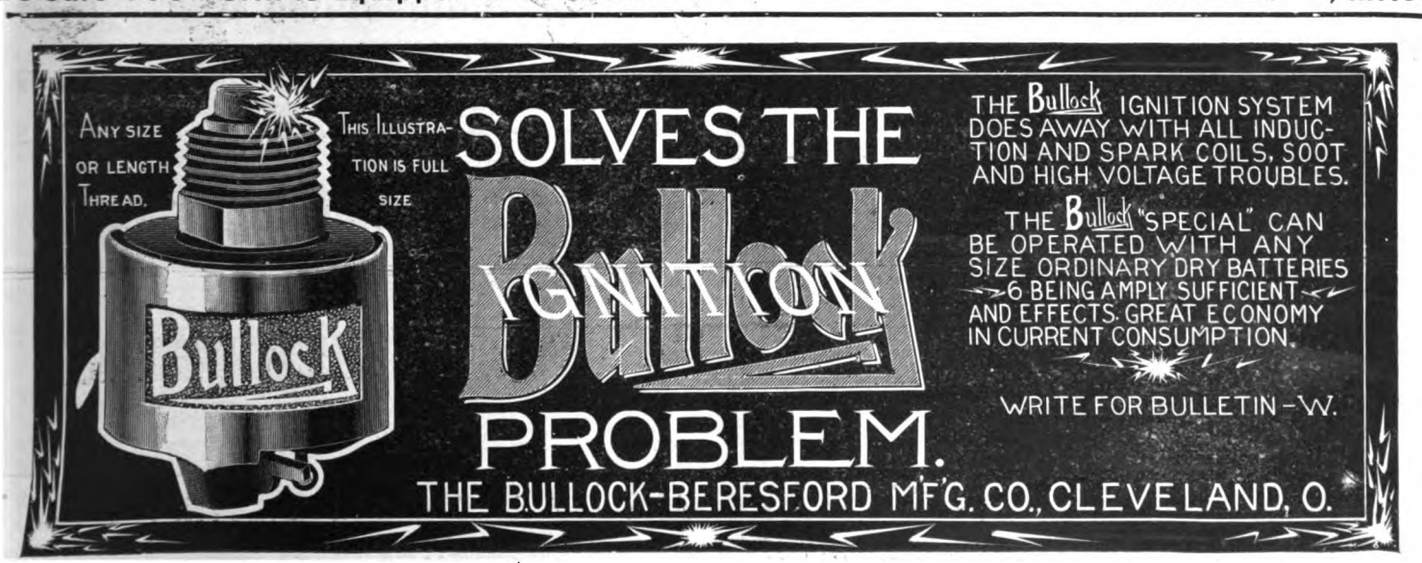
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to be loaded and a laterally movable loading table adapted to sustain the vehicle and having a rotatable portion upon which the vehicle rests, a means engaging the vehicle and acting to turn it and the table into position parallel therewith and for moving the vehicle and table laterally into desired position.

772,071. Steam boiler. John J. Tonkin, Oswego, N. Y. Filed February 17, 1904. Serial No. 194,022. (No model.)

Claim.—A steam boiler comprising two water legs extending directly across the ends of the boiler and formed with flue sheets at their inner sides, longitudinal water tubes connected at their ends to said flue sheets, rollers supporting one of said water legs, a steam and water drum superposed on one of the water legs and communicating therewith, and a water circulating pipe extending from said drum to the water leg at the opposite end of the boiler and deflected intermediate its ends to yield to longitudinal strain as set forth.

772,123. Lead containing cell for secondary batteries. Vincent G. Apple, Dayton, Ohio. Filed June 3, 1903. Serial No. 159,838. (No model.)

Claim.—1. As an article of manufacture, a lead containing cell for secondary batteries whereof the containing wall structure is thinner and denser than ordinary cast walls, formed in a single piece without seam or joint, or lead, cast under pressure while in a softened or molten condition.

772,178. Cooling mechanism for explosive engines. Frank Reaugh, Oak Cliff, Tex. Filed May 8, 1903. Serial No. 156,175. (No model.)

Claim.—1. An engine having walls arranged within the cylinder and practically separating the interior of the cylinder from the interior of the crank case, the said walls forming spirally disposed air passages, one of said passages leading to the interior of the cylinder and admitting air to cool the piston, the other passage leading from the interior of the cylinder, and valves commanding said passages, the air circulation through the passages being enforced by the piston movement.

772,198. Vehicle. Joseph A. Williams, Cleveland, Ohio. Filed June 16, 1904. Serial No. 212,796. (No model.)

Claim.—1. The combination with a frame of an axle rotatable therein, wheels movable upon the axle but constrained to rotate therewith, an annular guide member pivoted about a fixed point upon the frame, and an annular projection from the wheel coacting with the guide member.

772,199. Vehicle. Joseph A. Williams, Cleveland, Ohio. Filed June 16, 1904. Serial No. 212,797. (No model.)

Claim.—1. The combination with a frame of an axle mounted to swing thereon, a vehicle wheel rotatable about the axle, driving teeth in rotatable engagement with the wheel, and means carried by the frame for guiding the teeth.

772,209. Wheel rim. Richard S. Bryant, Columbus, Ohio. Filed February 23, 1904. Serial No. 194,666. (No model.)

Claim—In a wheel rim, the combination with the rim body having a key channel in its outer face adjacent to its edge, of a detachable tire retaining ring adapted to be mounted on said rim above said channel, said retaining ring having an angular recess in its base as described, and a broken locking ring adapted to engage as described said tire channel and said retaining ring recess.

772,214. Engine and gear casing. John Carney, Waltham, Mass. Filed February 11, 1904. Serial No. 193,172. (No model.)

Claim—1. An engine and gear casing comprising, an engine covering, a chain cover and a sprocket wheel covering, and means for removably connecting said coverings together to form a complete casing for said parts, substantially as described.

772,235. Electric Igniter for Explosive Engines. William B. Hayden, New York, N. Y. Filed February 15, 1904. Serial No. 193,620. (No model.)

Claim—1. An electrical igniting device for explosive engines, comprising a movable contact block, a pair of yielding contacts co-operating therewith, suitable electrical connections for the block and contacts, and means for elevating and lowering said contacts, thereby varying the time of ignition of the explosive charge.

772,270. Self-Propelled Vehicle. Harvey Beckwith, Oakland, Cal. Filed March 24, 1904. Serial No. 199,845. (No model.)

Claim—1. The combination with a vehicle having a supporting drive wheel, of a power shaft, a sprocket wheel or gear upon said shaft provided with teeth or projections upon its periphery and its sides, and a flexible endless belt passed about said sprocket wheel and said supporting drive wheel, said belt comprising loosely connected slats having projections to enter the spaces between the teeth on the periphery of said sprocket wheel and projections to both guide said belt and wheels into engagement with each other and enter the spaces between the teeth upon the sides of said sprocket wheel, substantially as described.

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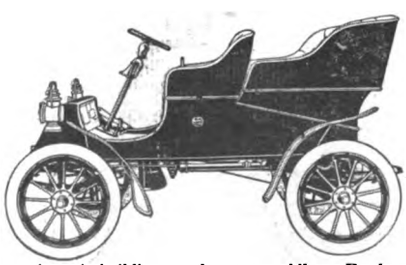
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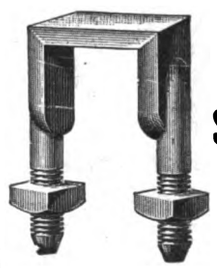
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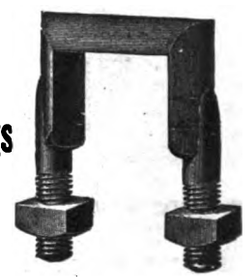
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Pressed steel frames, pressed steel hubs, malleable hubs, brakes, steering gear, chains, transmission gears, engine cranks, mufflers, front axles (tubular and forged), rear axles (chain and bevel gear drive), electric truck parts.
FEDERAL MANUFACTURING COMPANY, ELYRIA, OHIO.
Selling Agent—Hayden Eames, American Trust Building, Cleveland

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Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

Send for Catalog

AUTOMOBILE EQUIPMENT COMPANY
251 Jefferson Street, Detroit, Mich.

Autolyte Lamps, Imported Horns.

A. H. FUNKE,
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QUINBY AUTOMOBILE-BODY DEPARTMENT
EMERSON BROOKS, Manager.
1534 Broadway, cor. of 45th St., New York.
Telephone, 6536-38th St.

TOURING CAR

THE F. B. STEARNS CO.,
CLEVELAND, OHIO, U. S. A.

Big Four Route TO St. Louis

"The Way of the World" to the World's Fair

For information as to rates, hotels and boarding houses, address nearest Big Four Agent, or

WARREN J. LYNCH,
G. P. and T. Agent, Cincinnati, O.

NELSON STEAM WATER PUMP

Adopted by Users of the
WHITE AND STANLEY
Systems as the Only Positive and Reliable Boiler Feed.
JOHN SIMMONS CO.,
104-110 Centre St., New York.

HOMES IN THE SOUTH.

There are in the Southern States awaiting development thousands of acres of uncultivated farm lands in tracts of all sizes, which can be purchased very cheaply. They are productive, healthy, and close to good markets. In ten States reached by the lines of the

SOUTHERN RAILWAY.

For information about opportunities now available, prices of land, character of soils, etc., write to

M. V. RICHARDS, Land and Industrial Agents,
WASHINGTON, D. C., Southern Railway.



The Baldwin Chain Company
— MAKE —
Automobile Chains, Sprockets, Spur and Bevel Gears.
Baldwin Chain & Mfg. Co.,
Worcester, Mass., U. S. A.

Peerless Motor Cars.

THE PEERLESS MOTOR CAR CO.,
Cleveland, Ohio.



TIRE COVERS.

Best Goods. Lowest Prices.

Write for quotations and catalogue of other Auto Supplies.

The Wm. H. Wiley & Son Co.
Box 78. Hartford, Conn.

THE HILL PRECISION OILER

Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
832 Austin Ave., Chicago, Ill.

CRESTMOBILE

$800 for two persons, and $900 for four persons

The standard low priced air-cooled car.

THE CREST MFG. COMPANY,
Cambridge, Mass., U. S. A.

The Miller Mica Spark Plug.

GUARANTEED FOR 90 DAYS.



Furnished in two sizes, ⅜ inch pipe thread and Metric French thread.

Price, each, ... $1.50
To fit auto car, ... $2.50
To fit Winton, ... $2.50

Special sizes to order.

No. 6 Catalog, the largest of its kind, mailed on request.

CHARLES E. MILLER,
Manufacturer, Jobber, Exporter and Importer,
97-99-101 READE ST., NEW YORK CITY
Retail Branch: 38th St. and Broadway.
Philadelphia Branch: 318-320 North Broad St.
Boston Branch: 202-204 Columbus Ave.



Springfield Top

PATENTS PENDING.
Aluminum Bodies
Aluminum Fenders
Aluminum Hoods.

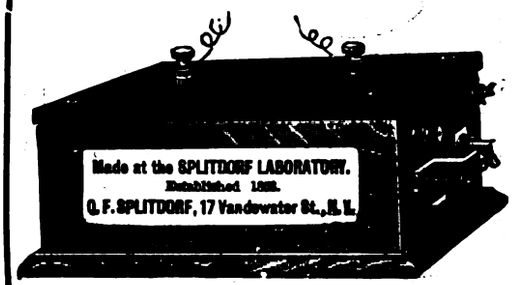
Springfield Metal Body Co.,
7 Cypress St.,
Springfield, Mass.

RADIATORS,

TANKS,
MUFFLERS,
FENDERS,
HOODS.



BRISCOE MFG. CO., - Detroit.



HIGH-GRADE LAMPS

Acetylene Gas and Oil
ATWOOD MFG. CO.,
Amesbury, Mass.

DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 38 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is located in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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THE

MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,
9 Packard Ave., Racine, Wis.

THE DUERR-WARD CO., No. 1787 Broadway, New York D'stributors.
ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor.

ACME DUST SHIELD



Does not interfere with entrance to tonneau. Made to fit any car. Easily removed. Rolls up into brass shield and out of the way when not in use. Price, complete, $12.00.

THE ACME MUFFLER for any horse power. Absolutely the most perfect muffler on the market Correspondence solicited.

ACME MOTOR CAR & REPAIR COMPANY,
Cleveland, Ohio.

STAMPINGS OF STEEL.

If you are using forgings or castings now, better write and see what we can do for you in making steel stampings.

THE PARISH & BINGHAM CO.,
Mfrs. of the Indestructible P. & B. Wheel,
Cleveland.

Eccentric ties of Foot Brake.

A motorist tells of a companion who, on a tour, alarmed the countryside by frequent explosions in the exhaust box. After listening to it for ten miles he dismounted and searched unsuccessfully for the cause. It puzzled him, because the spark of the plug looked so regular and strong, yet somehow the charge sometimes escaped ignition, with the not uncommon result of the flame from the next explosion igniting it in the exhaust box.

tI should be borne in mind that a spark in the open does not necessarily mean a spark in the cylinder, and that the space between the plug points consists, at the instant of sparking, of gas under high compression through which even the powerful secondary current finds resistance enough to prevent it from crossing over and causing its own tiny flame to explode the charge.

In the present case the driver did not set the plug points closer, for he knew the current itself was as powerful as before the trouble began. He set the trembler contact closer and that ended the missing. It is possible for the contacts to be set too nicely, so nicely that a slow movement may complete the circuit when a rapid one will occasionally fail to do it. Here is where the less experienced may easily have gone wrong. He might have set the plug points closer, when the missing would also probably have ceased, and been pleased with himself, without having detected the loss of power which must have ensued from a diminished spark. Nicety of adjustment increases power.

"Motorcycles: How to Manage Them." Price $1. The Goodman Company, 154 Nassau street, New York. ***

A Sharp Eye Ahead!

EYE-FIX TRADE MARK
THE GREAT EYE REMEDY

Driving an auto will be more of a pleasure and less of a strain on the eyes if you use EYE-FIX. This tried and true remedy strengthens weak eyes, cures watery eyes and allays irritation caused by wind and cold. It is an effective tonic for eyes that are dull, tired or overtaxed—makes them bright and clear—removes the aches and pains. Quickly cures sore eyes and instantly soothes eyes that are injured by particles of dust, etc. Carry EYE-FIX in your pocket, a small vial and a dropper in a neat case. Use it in a jiffy—two drops is a dose. All druggists and opticians sell EYE-FIX at **50c.**

Every dealer in automobiles and sundries should have EYE-FIX in stock. He will find a good sale for it among his patrons.

Inquiries cheerfully answered, and we send a trial bottle, post-paid, for 10c.

EYE-FIX REMEDY CO.,
Dept. S., Detroit, Mich., U. S. A.

WHITLOCK COOLERS

For 1905.



Experiments are Expensive.

Sometimes they are not only expensive, but fatal. This is especially true in motor car construction. It is, therefore, always on the side of safety and good judgment to adopt those parts which have stood the test of time and have acquired for themselves a reputation based upon actual merit Price is not always the most important consideration.

Therefore, in deciding what cooler you will use for 1905, select one with a reputation.

The Whitlock Cooler has stood the test of time. It has been used for two seasons by the majority of American builders of touring cars. Our experience in this line is now unequalled. Write us about your cooler proposition.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT

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WHITNEY CHAINS

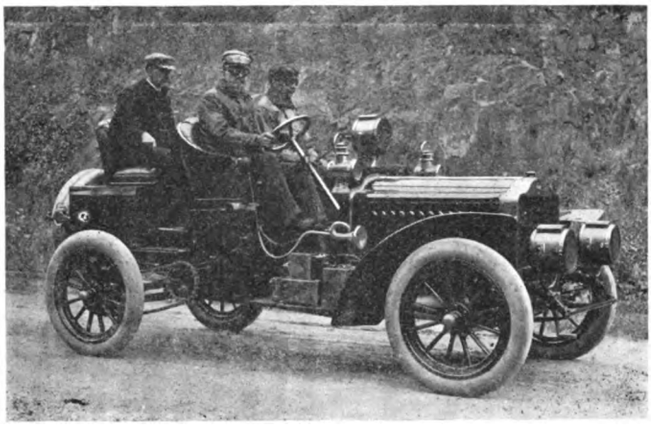
WHITNEY CHAINS

DOUBLE CHAIN DRIVE.

WATCH IT TAKE THE LEAD FOR HEAVY DUTY.

BEVEL GEARED LIVE AXLES and UNIVERSAL JOINTS will be scarce articles on the successful Commercial Cars. Think it over.

COLUMBIA 1904 RECORD CAR.



Chicago TO New York

"WHITNEY" CHAINS.

1904.

HARTFORD, CONN., Oct. 7th, 1904.
THE WHITNEY MFG. CO., Hartford, Conn.

GENTLEMEN: The COLUMBIA Car, which recently broke all records from Chicago to New York, was equipped with WHITNEY CHAINS, and, as usual, on COLUMBIA CARS, their PERFORMANCE WAS PERFECT.

Total elapsed time, 58 hours, 35 minutes. Actual running time, 51 hours, 05 minutes.

In 1903, when the COLUMBIA Car established the record of 76 hours from Chicago to New York, WHITNEY CHAINS were then used with the same excellent results.

ELECTRIC VEHICLE COMPANY,
M. J. BUDLONG, President.

1903.

HARTFORD, CONN., Oct. 13, 1903.
THE WHITNEY MFG. CO.,
Hartford, Conn.

DEAR SIRS: Answering your inquiry, we take pleasure in advising you that our 24 H. P. Columbia Touring Car, which covered 1177 miles between Chicago and New York City, in 76 hours, establishing the most important and valuable automobile record to date, was equipped for the run with your 1¼ inch Pitch, light model Roller Chains. We are also pleased to inform you that a single set of these chains on another of our cars has given upwards of 12,000 miles of service without serious deterioration. All the Columbia gasolene cars sold this year have been furnished with "Whitney" Chains, and we have yet to hear of a case of breakage or other "chain trouble."

Yours very truly,
ELECTRIC VEHICLE COMPANY,
M. J. BUDLONG, President.

WHITNEY CHAINS
THE WHITNEY MFG CO., HARTFORD CONN.

WHITNEY CHAINS
THE WHITNEY MFG CO., HA

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Oldsmobile



The Best the Field Affords

By Reason of

1—Oldsmobile motor—ripe product of over twenty years successful experience.

2—Simplicity of mechanical construction. The absence of all gaskets. Cylinders and cylinder heads cast integral. Bearings self-oiling; cam shaft gearing entirely encased.

3—Easy to start—absolute impossibility of "kicking back" in starting.

4—Style, comfort, power, plenty of speed.

5—Light Tonneau Car equipped with tilting steering post, divided front seat, honey-comb radiator, etc.

On the recent Automobile Tour—from New York to St. Louis—the Oldsmobile Tonneau Car easily held its own with cars costing from three to fifteen times as much. It maintained an average speed of twenty miles an hour over the entire trip.

Oldsmobile Standard Runabout, $650.00; Oldsmobile Touring Runabout, $750.00; Oldsmobile Light Tonneau Car, $950.00.

All prices F. O. B. Factory. Catalogue Free. Address

Olds Motor Works,

1332 Jefferson Ave., Detroit, U. S. A.

Members of the Association of Licensed Automobile Manufacturers.

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IN THE

VANDERBILT CUP RACE

GOODRICH TIRES

were the only tires in the race which gave absolutely no trouble.

A CLEAN SCORE AS USUAL.

THE B. F. GOODRICH CO.

AKRON, OHIO.

NEW YORK, 66-68 Reade St. and 1625 Broadway.
BOSTON, 157 Summer St. CLEVELAND, 420 Superior St.
CHICAGO, 141 Lake St. PHILADELPHIA, 909 Arch St.
BUFFALO, 9 W. Huron St. DENVER, 1444 Curtis St.
DETROIT, 80 E. Congress St. SAN FRANCISCO, 392 Mission St.
LONDON, E. C., 7 Snow Hill.

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The FORD 1905 Cars

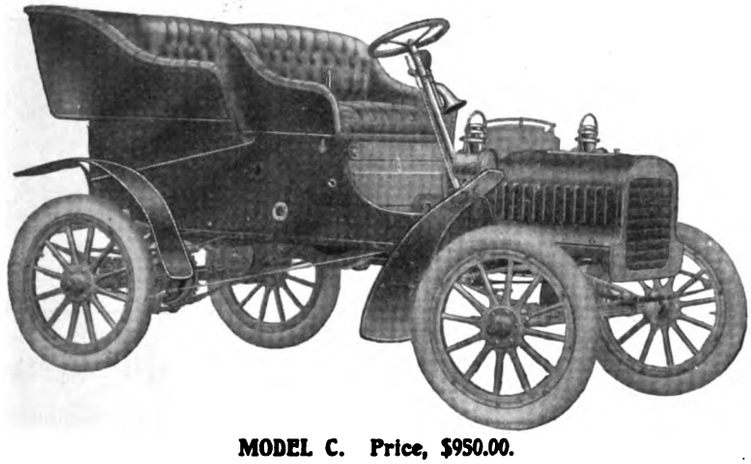


MODEL B. Price, $2000.00.

HENRY FORD'S LATEST AND GREATEST SUCCESS.

Our 1905 Touring Car weighs only 1710 lbs. The 4-cylinder vertical motor develops over 20 horse power, SO THAT THIS CAR HAS MORE POWER FOR ITS WEIGHT THAN ANY CAR IN THE WORLD.

Wheel base, 92 inches; direct drive, with universal coupling; cylinders, 4 x 5, water cooled; automatic oiling device with force feed; large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car place this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horse power, planetary transmission, chain drive, and increased gasoline capacity. The most stylish, low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. Write us To-day for Full Information.

THE FORD MOTOR COMPANY, - Detroit, Mich.

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— THAT ETERNAL QUESTION —

— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," 'Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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THE Incomparable White



Some Cups Won



in Stock Races.



Races, and other competitions which are confined to stock cars can not fail to have more interest for motorists than any other motor competitions. The reliability of the WHITE Steam Car has been so repeatedly proven in official trials, both at home and abroad, that it has become a generally accepted fact all over the motor world that the WHITE is a really reliable motor car. The speed of the WHITE is now frequently claiming attention, and recent victories of the WHITE Cars in stock races in St. Louis, Pittsburg, Monterey and Kansas City, all point one way—to the speed of the WHITE Steam Cars on the road and on the track.

WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.

Less than One-Half of One Cent per Mile for Repairs.

Detroit, Mich., Sept. 2, 1904.

CADILLAC AUTOMOBILE CO.,
Detroit, Mich.

Gentlemen: On the 25th of April, 1903, I purchased through your sales agent, Wm. E. Metzger, Cadillac No. 183, which I think was one of the first machines you manufactured. Since that time I have driven it something over 14,000 miles, and my repair bill in that time has been a little less than $60.00.

I want to thank you for the courteous way in which you have always treated me, and if your model D machine is as good as the Model A, you can consider my order placed now.

Very truly yours, (Signed) ARTHUR A. PALMER,
Adrian, Mich.

A good Operator can run a CADILLAC several seasons at small cost for repairs if he will take the proper care of his machine. The exclusive selling right for the CADILLAC line for 1905 may be open for your vicinity. Do you want it?

CADILLAC AUTOMOBILE COMPANY,

Member Association Licensed Automobile Manufacturers

Detroit, Mich.

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DAD SAYS HE'S NOTICED THAT EVERY TIME A FELLOW STARTS USIN' MORGAN & WRIGHT CLINCHER TIRES HE QUITS TALKIN ABOUT HIS TIRE TROUBLES

HAYDEN AUTOMOBILE CO.
CHICAGO.

MORGAN & WRIGHT,
CHICAGO.

Gentlemen:—We beg to advise that the set of Clincher Tires purchased of you have been used on our demonstrator and have given the very best of satisfaction. **We have run these tires sixty-five hundred miles without having any trouble whatever other than an occasional puncture,** and at this time they are apparently as good as new, except for slight wear on the tread.

HAYDEN AUTOMOBILE CO,
J. W. HAYDEN.

MORGAN & WRIGHT,
CHICAGO.

New York Dayton Detroit
St. Louis San Francisco

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

PREMIER

AIR COOLED. DIRECT RADIATION.

The following letter speaks for itself.

Chicago, Sept. 12, 1904.

PREMIER MOTOR MFG. COMPANY,
Indianapolis, Ind.

Gentlemen—I wish to take this opportunity to tell you that I am more than satisfied with my machine. It has averaged seventy-five to a hundred miles daily since I purchased it. On the hottest day of this season—July 15th—Mr. George Elmslie and myself left Chicago, making a run of one hundred and thirty-eight miles without a stop save for luncheon.

I have made two trips to Oconomowoc without stop and return, and have stopped but twice or three times for insignificant repairs since using it.

I have had a great deal of experience in the last five years, and have decided that this is the best machine for my daily work and pleasure. All I need now is a coupe top for Winter work.

Cordially yours,
F. H. BLACKMARR, M. D.,
40th & Cottage Grove Ave.

1905 Cars Now Ready for Delivery.

Premier Motor Mfg. Co.
INDIANAPOLIS, IND.

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WINTON

The 1905 PRODUCTS of The house of Winton will be announced on this page next week.

THE WINTON MOTOR CARRIAGE CO.

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

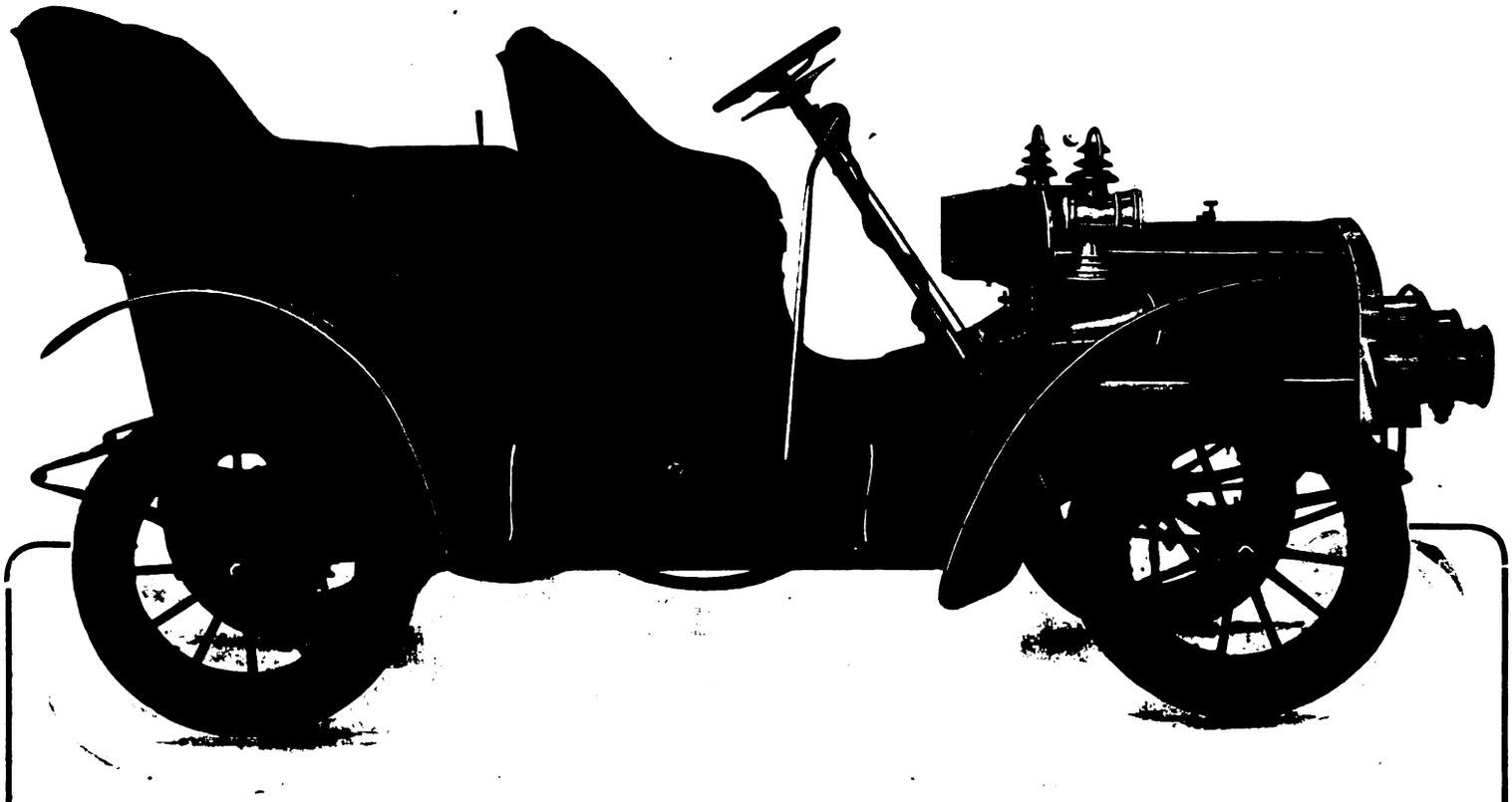
Great Arrow, 28-32 " " " $4000

Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

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The Reliable Rambler Surrey

Type One. 1905 Model.

Two Cylinders. 16 H. P. Immediate Delivery. $1350.

In the race at Rockford, Illinois, October 8th, a RAMBLER, 1904 model, with two cylinders, won a mile race from a 1905 model of another make with four cylinders and nearly twice the rated power.

Time, 1:17 2-5 vs. 1:19.

RAMBLER'S rated power.

Other car's rated power.

RAMBLER'S cost.

Other car's cost,

and yet the RAMBLER is not designed for speed, but for practical work—for use on rough roads and hills.

The working idea of the RAMBLER factory is simplicity—the putting together of mechanism that any one with good sense can manipulate. This at the lowest price consistent with good workmanship—a price much lower than other manufacturers', because of our enormous output, which makes possible a great buying power and the employment of each man and each machine for one detail only.

Let us tell you more about how the RAMBLER is built—and enjoyed.

THOMAS B. JEFFERY & COMPANY,

BRANCHES: BOSTON, 145 Columbus Avenue. CHICAGO, 304-306 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

Main Office and Factory: Kenosha, Wis.

NEW YORK AGENCY, 140 West 38th Street.

REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, October 27, 1904. No. 5

ALLOTTING SHOW SPACE

Great Demand Will Render Paring Necessary—How Distribution Will be Made.

In the allotment of space for the forthcoming show at Madison Square Garden, this city, preference will be given, first, to exhibitors who are members of the National Association of Automobile Manufacturers, and, second, to those members who have been most consistent exhibitors at previous shows. That is to say, the members who have exhibited at the four previous shows—those of 1900, 1901, 1903 and 1904—will be given preference over other applicants, while those who exhibited at three shows will be next preferred, and those who had space at two and one previous show, respectively, will be favored in that order.

The allotment for the New York show will be made on Monday next, and that for the Chicago show on the following day, Tuesday. Already sufficient applications are in hand to render it certain that the crowding at Madison Square Garden will be as great as it was last year, in spite of the increased space that will be available. Some disappointments will be experienced, and the task of reconciling the conflicting claims and of cutting down the amount of space wherever possible is certain to be a huge one. Where applicants who have exhibited at all four shows do not conflict with each other, they will be allotted the spaces they ask for. The three-show exhibitors will next be taken up and be apportioned spaces where there is no confliction, and so on down the line. The allotment will be made by S. A. Miles, representing the N. A. A. M.; J. C. Young, on behalf of the Madison Square Garden Association, and General George Moore Smith, for the Automobile Club of America.

On Monday also the allotment of the 10,000 square feet of space awarded the Motor and Accessories Manufacturers will be made by the committee of that organization.

Applications for 165 spaces at the Chicago show have been received, and nearly a dozen prominent concerns that will also be represented are yet to be heard from. This rush for space at the Windy City exhibition is not causing any uneasiness, however, as the floor space available at the Colisseum is so large that little difficulty in accommodating all applicants will be experienced.

Fisk's Western Office Opened.

The Western sales office of the Fisk Rubber Co., the decision to establish which was exclusively noted in the Motor World and which represents no small departure, has been formally opened at No. 52 State street, Chicago. As was previously stated, it will be under the management of Frank C. Riggs.

The new office will handle all Fisk business in the following States: North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Indiana, Indian Territory, Texas, Minnesota, Iowa, Missouri, Arkansas, Wisconsin Illinois, Michigan, Kentucky, Ohio, West Virginia and lower part of Pennsylvania.

Knox Steps Down and Out.

Harry A. Knox, vice-president and mechanical head of the Knox Automobile Co., has resigned those offices, disposed of his holdings and is no longer connected with the concern in any capacity. James H. Jones has been promoted to the post of chief engineer. It is stated that Mr. Knox, the inventor of the new well known air-cooled car bearing his name, "feels that he has earned a long vacation, and intends to take one before again engaging in active business."

Rogers Completes Organization.

The organization of the Rogers Automobile Co., of Springfield, Mass., has been completed by the election of the following officers: Louis F. Ivers, president, and Charles M. Woodward, treasurer. The concern is considering the purchase of a site in West Springfield, upon which to erect a plant.

Berkshire Will Build New Factory.

Factory buildings, to cost $10,000, will be erected by the newly incorporated Berkshire Automobile Co., of Pittsfield, Mass. It is expected to be ready for occupancy in December. Gasolene cars of 12 and 20 horse power will be made.

RAISED THREE MORE

St. Louis Exposition Revises Awards and Big Makers Benefit—Gold Will be Bronze.

As the result of a "second think" on the part of the Superior Jury of Awards, the number of automobile manufacturers to receive grand prizes from the St. Louis Exposition has been increased from five to eight.

The three who benefited by the maturer consideration of the jury were the Electric Vehicle Co., the Winton Motor Carriage Co. and the Packard Motor Car Co. Originally the Electric Vehicle and Packard had been allotted gold medals and Winton a silver one.

The other recipients of grand prizes were, as the Motor World was first to announce, the Haynes-Apperson Co., the George N. Pierce Co., the Pope Mfg. Co., the White Sewing Machine Co. and one other.

Unless they themselves pay the price of the more precious metals, however, the exhibitors who received gold and silver awards will receive bronze medals, bearing, respectively, the stamps "Gold" or "Silver," as the case may be.

This measure is taken because the exposition is under heavy expense, and it is necessary to practise economy. Bids for the manufacture of these counterfeit gold and silver medals have been called for, the managers of the exposition having reached the ingenious decision that it is not the material out of which the medals awarded the exhibitors are made that indicates their value, but the stamp of the exposition company.

Acme Will Make Three Models.

For the 1905 season the Acme Motor Car Co., of Reading, Pa., will place on the market three models—one, two and four cylinder cars, respectively. All except the first mentioned will have pressed steel frames and mechanically operated valves.

F. E. Moskovics, the new sales manager of the company, expects to handle the business from New York, or at least to establish an office here. It is probable also that a branch will be opened in Chicago.

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FRANK SCOTT'S EASIEST SALE

How it Brought Husband and Wife Together and Gave the Dealer a Pang.

Frank Scott, proprietor of the Special Motor Vehicle Co., Cincinnati, made easy money one day last week, and lost it as easily. He was preparing to go to lunch, when a cab drew up in front of his store and a well dressed man jumped out. He wanted an automobile, and wanted it quickly. Scott showed him a number of new cars, but none appealed to him. The price of each was too high. When, however, the visitor was shown a second hand Long Distance car at $450 he jumped at the "bargain." The fact that the car was only about four years old did not affect the purchaser's judgment. Asked if he desired a demonstration, he declined it. Scott looked at the man in amazement, and when he pulled out a roll of yellow backed five-hundred-dollar-bills he looked at him again.

While he is a good salesman, Scott is not accustomed to making sales quite so easily. When the man peeled off a "yellow back" from his roll Scott discovered that he had no change for the amount. In fact, so easy had the sale been made that he was afraid of the money anyway. Accordingly he went with the stranger to the bank, which promptly exchanged the big bill for smaller ones. Scott's suspicions took wings and he took his $450 and gave the stranger a receipt.

The new owner of the car then asked the loan of a man to drive him to Cynthiana, Ky. Scott was only too willing to oblige. He even delegated his brother Tom to perform the pleasure. Before they had fairly started the stranger asked that the car be stopped at the Grand Hotel in order that he might obtain his grip. The driver was obliging of course, and did as requested. The man disappeared in the hotel, and Tom Scott waited and waited. In fact, he waited until he was weary—very weary. Then he went indoors to look for his customer. He was nowhere to be found. When Scott returned to the car, however a lady was awaiting him. She stated that the new owner of the car was her husband, her long lost, long chased husband. She had followed him from Cincinnati to New Orleans, from New Orleans to St. Louis and from St. Louis back to Cincinnati. She was not the only one looking for the man. The police were after him also; not that he was a crook—he was merely crazy.

Scott gave back the $450 and returned to the garage a sadder but a wiser man.

Decatur Dealers Spread Out.

Johnson & Landis, Decatur, Ill., are erecting a building, 114x43 feet, to be used as a salesroom and garage. It will be equipped with all modern improvements, including a repair shop, charging station, and will be ready for occupancy in a few weeks.

The Week's Incorporations.

Camden, N. J.—The Kensington Automobile Co., under New Jersey laws, with $100,000 capital. Incorporators: V. W. Sipes, D. G. Cameron, E. C. Huselton and H. A. Tucker.

Portland, Me.—Kendall Leather Tire Co., under Maine laws, with $500,000 capital. Officers: President, W. G. Kendall, Procidence, R. I.; treasurer, F. P. Larrabee, Portland, Me.

Framingham, Mass.—American Roller Bearing Co., under Massachusetts laws, with $325,000 capital. Officers: President, William B. Lambert, Boston; treasurer and clerk, Frederick B. Hill, South Framingham.

Detroit, Mich.—Pungs-Finch Automobile and Gas Engine Co., under Michigan laws, with $200,000 capital stock. Incorporators: William A. Pungs, Edward B. Finch, Ida M. P. Finch and Dwight C. Rexford.

Where Business Will Blossom.

"Unless I miss my guess," said a man recently retired from the St. Louis Exposition, "the South and West will prove happy hunting grounds for the automobile trade next season, particularly that portion of the trade producing the moderate priced cars. The attendance at the exposition has picked up amazingly, and large crowds are now the rule each day. The overwhelming majority of these people come from the South and West, and the interest they display in the automobile exhibits is encouragingly astonishing—it is real interest, and the kind that promises to result in sales next season if properly followed up. How do I know they were from the South and West? Pshaw! You could tell them the moment they opened their mouths. The Easterner always pronounced it as it is spelled, St. Louis. The folks from the South and West always give themselves away by calling it 'St. Louie.'"

Pope New Building Assuming Shape.

Work on the new Pope building at Broadway and Fifty-fourth street, this city, has progressed far enough to make it plain that it will be a handsome as well as substantial edifice. The foundation is complete and the structural work now extends above the second floor. The brickwork is also well advanced. It is light in color, and its contrast to the big plate glass windows will be very striking. It is thought that the buildin be ready for occupancy by the end of this winter.

Gets More Room to Make Bodies.

Owing to the substantial increase in the demand for their aluminum bodies, fenders and tops, the Springfield (Mass.) Metal Body Co. are this week removing to a larger plant which will enable them to better care for the business. The new factory is located in that portion of Springfield known as Brightwood, five minutes by trolley from the railroad depot.

DISAGREED OVER DEWEY PATENT

And Now the Former Partners are Asking the Court to Settle the Squabble.

An echo of ancient automobile history was heard last wek at Providence, R. I., when, in the Appellate Division, there was a hearing of arguments on the bill, answer and proof in the case of Daniel McNiven against Julian A. Chase and another. The bill asks for an accounting from the respondent, Chase.

McNiven, Chase and Mossberg organized in 1899 the United States Automobile Co., to manufacture automobiles. Certain patent rights known as the Dewey patents had been acquired, under which the corporation was to carry on business. These patents were to be paid for in four installments of $2,500 each. The complainant claims that he actually paid $5,000 of the $10,000 required for the patent rights, the excess of $1,666.67 being paid for the respondent, Chase, as a loan to him, Chase at that time being short of funds.

The respondent, Chase, however, seeks to evade paying anything to McNiven, alleging that after the organization of the company McNiven agreed with the two respondents that he would undertake to sell enough of the stock issued to meet the payments on the patent rights as they became due, and in case of his failure to do so, would personally pay the whole of the $10,000 himself.

Who's Tempting Penn Yan?

The Penn Yan (N. Y.) Board of Trade has received a proposition from an automobile manufacturing company, the name of which is not given, which wishes to enlarge its plant or move, looking to its removal to that village. A meeting of the board was recently held, but the representative of the concern failed to appear, and a committee was appointed to visit the firm's present location and report at the next meeting of the Board of Trade.

Pope to Build a Racer.

The splendid showing of the 2- horsepower Pope-Toledo in the Vanderbilt Cup race has had its effect on the powers that be of the Pope Mfg. Co. The immediate result will be a six cylinder 90 horsepower car, which will make its appearance at the Ormond Beach carnival in January. Vice-President Albert L. Pope states that it is being constructed with a view to obtaining the mile record of 39 seconds.

Chains Free of Duty.

The Australian customs authorities have given a decision to the effect "that motor car chains not accompanying motors" are to be classified as "chains n. e. i." and admitted free of import duty.

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RADICAL DEPARTURES

New Car That Bristles With Striking Innovations—Has Revolving Cylinders and is Controlled by Variable Compression.

In very many respects, quite the most interesting and featureful, if not actually sensational, automobile that has been devised during recent years, is announced as ready for marketing by the Adams Co., Dubuque, Iowa, whose simple, yet ingenious, gradometer has closely identified them with the trade.

The Adams-Farwell car, as it will be styled, employs not merely a radical departure in motors, but in nearly every other essential part incorporates originality of such high order that it cannot well fail to command almost universal attention. It is to be added that the car was not presented to the public until long and exhaustive experiment, extending over several years, had convinced its sponsors that radical though it may appear in many details, it is outside the realm of doubt or questionable merit. The extent of their efforts to assure themselves on this point may be measured by the fact that the perfected car, as here illustrated, represents the concentrated experience with four previous models, the first of which was made up as early as 1898.

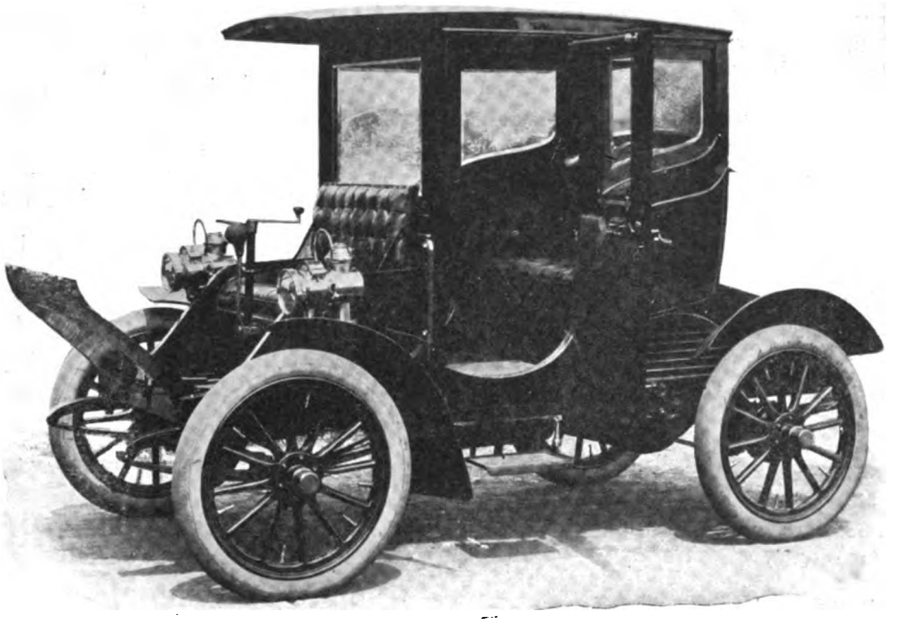
The body is what they call a convertible brougham; convertible in that it will comfortably accommodate seven passengers, and yet it may be used as a single seated car and present the elegant appearance and have the luxurious riding qualities of the brougham. To accomplish this it was necessary to provide motor power and running gear of strength sufficient for a seven passenger car, to arrange means which would enable the car being operated from the enclosed part when occupied by three or less, or operated from the front seat when more passengers are accommodated, and to provide variable strength springs, making it safe for a full load and yet pleasant riding for a single occupant.

The car, in either form, has an appropriate appearance—not a runabout, with a temporary seat to it, nor a carryall looking for passengers.

In pleasant weather the plate glass windows in front, doors, sides of seat and in the back may be dropped, making the vehicle virtually an open one. The pillars supporting the solid top, while rigid, are comparatively small, not obstructing the view or air circulation. At the same time a curtain may be instantly drawn down to exclude wind, dust or sun, or a sash drawn up to exclude cold or rain. When entirely enclosed with all windows in position the occupants have an unobstructed view.

The furnishings and general appointments of the car are very complete. The seats, sides and backs are richly trimmed in dark green, hand buffed leather of the finest quality. Curled hair and springs make the seat upholstery most comfortable. Speaking tube, curtains, hooks for coats and wraps, lamps, horn, tools, etc., are furnished. In the front seat there is a free space for storage, 31 inches wide, 24 inches deep and 11½ inches high. By removing the front cushion additional space can be used, and by opening up the front a small trunk or other baggage can be transported.

The remarkably easy riding qualities of the car are attributable to two essential features. First, the passenger seats are between the axles, not overhanging the rear axle. The vibration communicated to the passengers is claimed to be much less than that communicated to the axle, and the springs have less to overcome than have the springs on a vehicle with a seat overhanging the rear axle.



ADAMS-FARWELL CONVERTIBLE CAR.

The wear and tear on the rear tires is much less than with overhanging rear seat. Second, it is impossible to construct a car or a carriage with the ordinary springs and have it ride equally comfortably and safely with a passenger load of 150 pounds and with a load of 900 pounds. If the springs are strong enough for the heavy load they are too stiff for the light load, and, therefore, uncomfortable riding.

The Adams-Farwell people, therefore, equip their cars with their patent variable strength springs. This consists of an auxiliary leaf with means for clamping this leaf to the main spring. When more than two occupy the compartment the rear auxiliary springs are clamped to the main spring. When the front seat is occupied the front spring is clamped. The operation of loosening or clamping these auxiliary springs requires but a moment's time. Both front and rear springs being the same length and width, 40 inches by 2 inches, one extra spring carried on a tour would replace any spring, should one be broken by accident.

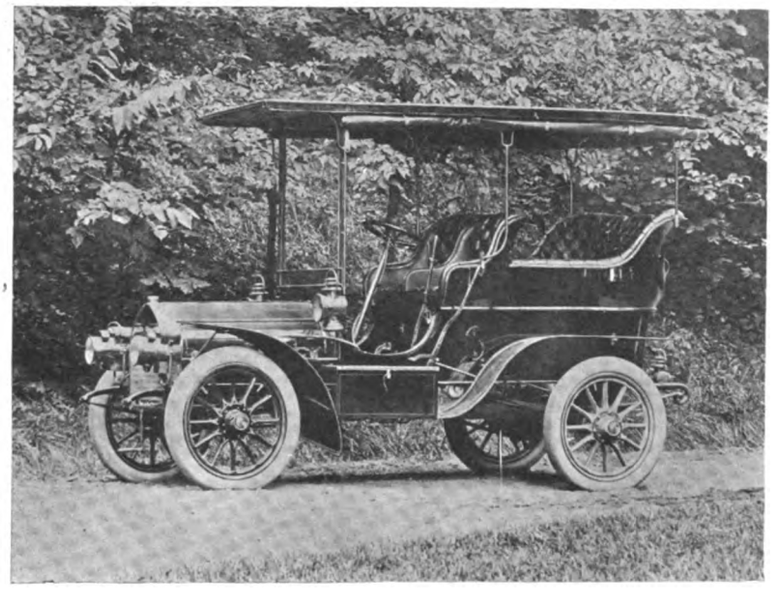
The car may be operated from the rear seat of the enclosed compartment or from the folding front seat. This system is patented, and is considered of the utmost importance in a car of this character. The change from one seat to the other of the controlling column and treadle requires less than a minute's time. In the control of the car there is employed a steering lever, one clutch lever, which also locks the brake; one foot treadle, to vary the speed of the engine, and a foot pedal to apply the hub brake—four in all, about half the number of controlling appliances found on many high powered cars. The proper direction of movement of these levers and treadles is that which one would do most naturally. The clutch lever, when in position straight back, locks the hub brake; a movement forward to the right releases the brake and engages the low forward gear; the car moves forward gently. A further movement forward releases the low and engages the high gear, the car moving faster. A backward movement of the lever releases the high and engages the low gear, the car slacking speed. A further movement backward releases the low, and a still further movement engages the backing gear, which may also be used as a brake. There is a position between the brake and backing where the spark is shut off and the engine stopped. Changing from low to high gear when ascending a hill can be done smoothly.

The speed of the motor is controlled entirely by a foot treadle, which regulates the variable compression control system. Spark and carburetter are automatic. A pressure of the toe increases the speed of the engine; a pressure of the heel decreases the speed.

An internal, expanding, double acting brake on the rear hub is engaged by pushing a pedal forward. If this brake is engaged when the clutch lever is straight back the brake

Continued on page 190.)

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GRAND PRIX

AWARDED

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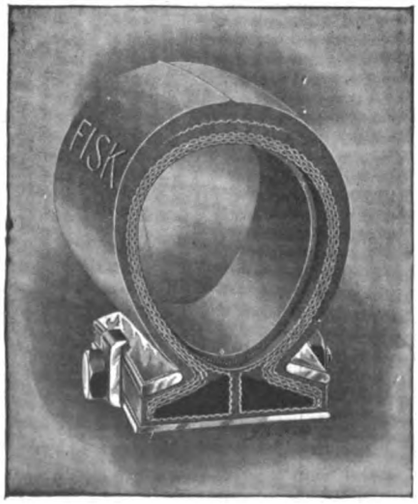
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Providing the "Full Line."

Each year makers find it necessary to give more attention to the task of providing their agents with a "full line" of cars. The time when one model could be produced and made to constitute the dealer's stock in trade has passed, never to return. It is even admitted now in many quarters that it is a good thing even from the maker's viewpoint to widen lines. By so doing it becomes possible to obtain the entire trade of customers, and not see them patronize other makers for anything different from the standard model produced by the maker in question.

In the large cities it was, until recently, no unusual practice for a dealer to content himself with representing a single maker, whose product was usually confined to one type of car. Such a policy, however, was never adopted by the dealer in the smaller cities and towns. They had to stock a more representative line in order to appeal to the largest possible number of buyers, as thereby the loss of many sales was avoided. It was the difference between keeping an automobile store where all kinds of cars could be procured and of establishing a depot for the sale of a particular car.

At the present time it is only at branch stores that the latter plan is still followed. The country dealer is no longer alone in carrying a diversified line. Even in the largest cities cars that do not directly conflict with the "leader" are stocked and pushed. Where the relations of the dealer with the maker are peculiarly close and intimate, and where the maker's line is unusually complete, an exception is sometimes made, but such cases are rare.

It has thus come to be realized that makers must either extend their lines or stand by and see dealers enter into relations with rival makers. As the latter course is naturally distasteful, the former is adopted wherever possible. Few lines can now be regarded as complete unless they include runabouts and touring cars, as well as single and multiple cylinder engined cars. On his part, the dealer is only too glad to have this policy of expansion followed by the maker. It is much more satisfactory to confine, as far as possible, one's dealings to a single concern. Bookkeeping is simplified, ordering is easier, complaints are more easily handled, replacements are better understood, and, last, but not least, only one credit system has to be established and maintained. Furthermore, the goods are more likely to be uniform, and the matter of guaranty is a more simple one that it would be if its interpretation were intrusted to two or more firms.

It remains to be seen, therefore, whether the policy of "one dealer, one line," can be made a success. The answer will in many cases depend to a very great extent on how diversified and comprehensive the line is. Dealers must consult their own interests chiefly in this as in other matters, and sentimental considerations will have little weight.

Lacking in Luxuriousness.

While the improvement and refinement of the mechanical details of the American cars were beyond dispute, a close and competent observer who had abundant opportunity to actually try a number of those exhibited at St. Louis, writes the Motor World that, contrasted with the French cars, the upholstery of the American productions was markedly inferior.

"The luxuriousness of the French cars, the sense of softness and at the same time firmness, with the entire lack of evidence that there are any springs in the cushions in the whole thing is very surprising," he added. "It does not seem either that the upholstery is so very much thicker than some of the best American machines; but, whatever be the cause, it certainly does hold one up better.

"Some of the best American machines, when tried on a rough road, proved to be too thin in the back seat. In one case in particular a hard jounce caused such a hard contact between springs and wooden bottom of the seat that there seemed to be hardly any upholstery there at all. It is just as though too much were trusted to the springs, and when the springs went down there was little or nothing between the body and the boards."

It is undoubtedly a fact that the French will pay more for this kind of luxury than the ordinary American purchaser, but, at the same time, it is equally true that he gets what he pays for—luxurious cushions.

Some purchasers of our American machines are willing to pay for luxury, too, and would do so if they really got it.

Part explanation for the situation may be in the fact that the chassis and body of a French car are usually made in two places, and the man pays for the body and has it made just as luxurious as he has money to make it. The upholsterer or body builder makes each body to suit the individual purchaser. This is seldom done here, where one stock body is built like another as near as it is possible to make it.

Repairs and the Charges Therefor.

The repair departments of most of our factories have not proven to be what they ought to be, from the standpoint of the owner of an automobile.

Work coming from them has been found to be badly done, expensive and altogether unsatisfactory. The charges made for parts applied and overhauling are out of all reason, as compared with the cost of the machine.

A simple mud guard brace purchased, and perhaps weighing a pound or two, costs a dollar or more. It is merely a bent piece of iron with a few holes in it. It is something that the owner himself can attach, but he has to pay a price beyond anything else outside of jewelry.

In the first place, if this mud guard brace had been well designed and well attached to the machine it would not have vibrated to

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such an extent as to drop off, which actually happened. So, really, the whole thing was the fault of the maker, and his encouragement to the purchaser and owner of an automobile was to charge him unmercifully for the repair.

This practice is the last that should be adopted by the manufacturer. The whole industry is still in an experimental stage. There are many things that break and go wrong about the automobile that are the fault of the maker. For this reason it should be made as easy as possible at this stage of the game for purchasers to have repairs made.

As it is, the one who has been unfortunate enough to have his machine in the shop for repairs tells his neighbor, a possible buyer, of what an awful repair bill he had. This discourages the neighbor from buying.

On the other hand, if the repair had been made at the lowest possible cost the buyer would have said so, and would have stated that the repair did not amount to much after all; the delay was the worst thing.

There is a very good reason for this. Good repair mechanics are hard to find. The ones that are really good mechanics in the automobile business find work in better places in the shop. The consequence is the "left-overs" find their way into the repair job. They waste time and material. They spend three or four hours looking for trouble that perhaps one hour will fix. They do not understand the machines. They cannot diagnose the trouble quickly.

This applies to the manufacturers' repair department; but it applies ten times more to the repair department of the ordinary garage.

The root of the evil is, after all, the fact that good men are scarce. The quicker the manufacturers take hold of this matter and spend a little money teaching good, common sense mechanics repair work the quicker will this sort of complaint cease.

The bicycle industry went through the same period, and when a machine was taken into a repair shop there was no certainty that it would come out all right. After a while mechanics that could do this work well became numerous. The automobile is a hundred times more complicated than the bicycle. It is going to take a higher grade mechanic to fill the bill. While there are new machines coming out almost every month in the year, and changing at least once a season, it is not to be expected that every repair man can learn every make and every model of it. It is a big proposition, and it will be no easy task to make things go smoothly. All the more reason for the manufacturer giving this some attention.

Seasons and Sales.

Despite the efforts made to eliminate "seasons" in the automobile industry, and to make it plain that the motor car is an all season as well as an all weather vehicle, it remains true that sales are almost entirely dependent on the weather. Most people buy cars only when they can use them. If it rains or snows they defer their purchases. If the sun shines brightly and unexpectedly they buy. No weathercock could be more influenced by the winds than they are by the weather.

With the passing of summer, eyes begin to turn toward the new models. A check is placed on trade, and a considerable number of sales are delayed, in spite of the fact that splendid touring weather is still to come, because buyers are disinclined to purchase old models when the new ones are almost ready to appear. If the latter are ready for delivery before the winter sets in some sales for immediate delivery are made; but, as not many are shipped before the first of the year, sales of this kind do not cut very much figure. With the coming of January and the shows all thought of the old models is dropped, and it then becomes a question of weather and deliveries what amount of actual business shall be done.

The winter of 1902-'03 was an open one, and dealers even to-day sigh regretfully when they contrast its record of sales with that made in the doleful winter of 1903-'04—the severest known for many years and the dullest in automobile history. If winters, like dreams, go by contraries, as many people say they do, the approaching one should be a record breaker, both in the way of openness and of sales producing character. Should it so turn out, those dealers who are, or soon will be, able to make deliveries of new goods will reap a harvest, and some of them are already felicitating themselves upon the prospect.

Generally speaking, the selling season extends from January until August. After the latter month—and sometimes after the Fourth of July—there is comparatively little done. This year, for example, August was a bad month, September a fair one and October considerably above the average, as a result of the fine weather that prevailed in many places. Little is expected of November, and still less of December, unless these months should also be marked by exceptionally fine weather. But with the beginning of the year a turn for the better is looked for, especially after the Madison Square Garden show and during February, when the season is expected to be in full swing.

For six months of the year, therefore, viz., from the beginning of October until the end of March, the weather plays the most important part in the making or marring of sales. If the elements are inclement during October, November and December sales drop away to almost nothing, some of them being entirely lost and others postponed until spring. It is not quite so bad after the first of the year. Then, even if the winter is severe, orders are booked and it is merely the deliveries that are delayed. Still, even that is quite a serious matter, for a sale is never really made until the car is actually delivered. Besides, few dealers have either the space to store or the credit to purchase and carry a large stock of cars against an uncertain delivery date. Deposits help some, both in binding the bargain and in relieving the financial strain. But there are few dealers who will not welcome an open winter and acknowledge that it gives the fillip to their business that is so badly needed at that time.

There is one meritorious object of pity who is seldom vouchsafed the manifestation of it. We refer to the demonstrator of a car, who, in his efforts to satisfy a prospective purchaser that his car is no slow coach, falls into the clutches of the law and has a sale almost made untimely nipped in the bud. Truly he has to carry water on both shoulders. If he observes the decorous speed of eight miles per he leaves his passenger uninspired and unfascinated; the expected and desired touch of "ginger" is lacking, and the professed law abiding citizen is disappointed at not being called upon to abet an infraction, even although only a tiny one, of the statute. If on the other hand he drives not wisely but too well, and is brought to book by a ready cop, he is in as bad if not worse plight. How will the passenger take it? Will he regard it as a joke, compensated for by the thought of a gloriously exhilarating ride? Or will he conclude that motoring is too sporty a game just at present and decide to wait until the "dark ages" of automobile legislation are a thing of the past? The point of view means a sale made or marred, and the demonstrator can only wait until he sees which it is.

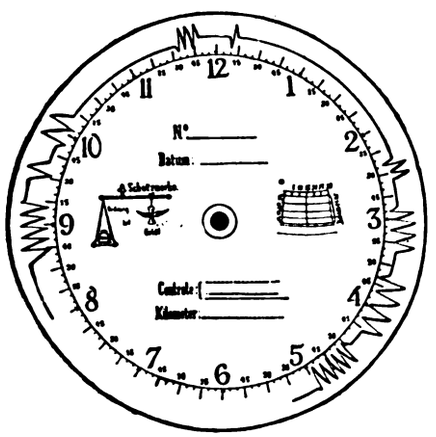
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VELOGRAPH IS ALMOST HUMAN

Marvellous Instrument That Enables an Owner to Account for Every Movement of His Car.

In a wonderful little instrument measuring only a few cubic inches and weighing but a few pounds, imported into this country from Germany and now being exhaustively tested, is contained a combination of movements that motorists have hitherto sought in vain. If the claims made on its behalf are born ouet—and there seems no reason to doubt it—the device will prove a boon not only to motorists but to owners of wheeled vehicles of every class.

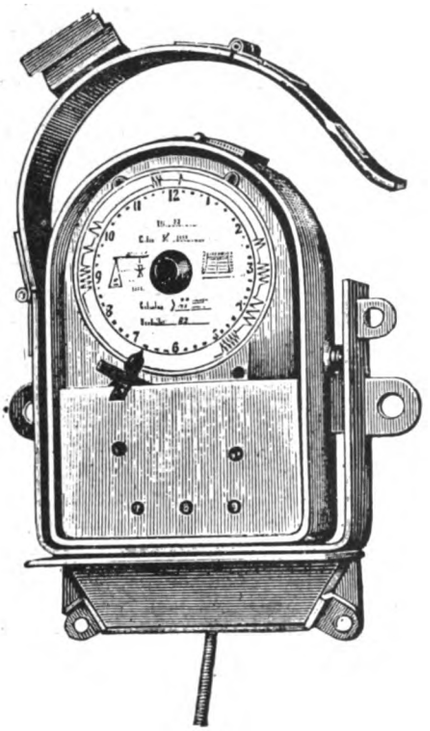
The device is styled the Velograph, and is being placed on the American market by Charles E. Miller, 97 Reade street, New York. It is an odometer, a speed indicator



and a clock, all in one. The record of speed is minute in detail and is kept in a permanent form, on disks, so that it can be filed away for reference at any future time. These disks record not only every movement of the car, but every stoppage, and tell how long the stoppage lasts, no matter how many there may be. In short, the disk contains a complete history of the car's movements for each twelve hours—its starts and stops and its rate of speed for every mile travelled.

The immense value of such an instrument is self-apparent. It checks, almost eradicates, the chauffeur evil, as that individual cannot deviate from the straight and narrow path of rectitude without leaving on the disk a record of his wrongdoing. An infallible and indisputable record of speed at all times is kept and would undoubtedly stand the closest scrutiny in a court of law. Before its mute testimony the evidence of "tin" stop watches and of b'gosh constables would fall to the ground. On the other hand, the chronic scorcher, who delights in forty and fifty mile an hour flights of speed, would do well to beware of the Velograph, for it would bear damning evidence against him.

The Velograph consists of clockwork in a wrought iron casing, a clamping frame, a flexible transmitter, a pinion with bracket, two clamps, a hub ring with spiral and 100 recording disks. The casing is affixed by screws to the dashboard or other suitable or convenient part of the car, and the clockwork placed in it, as shown. The hub ring with spiral—which is made in various sizes—is then attached to the near side front wheel hub, and the pinion and bracket is fastened by means of the two clamps to the front axle, in such a way that the pinion en-

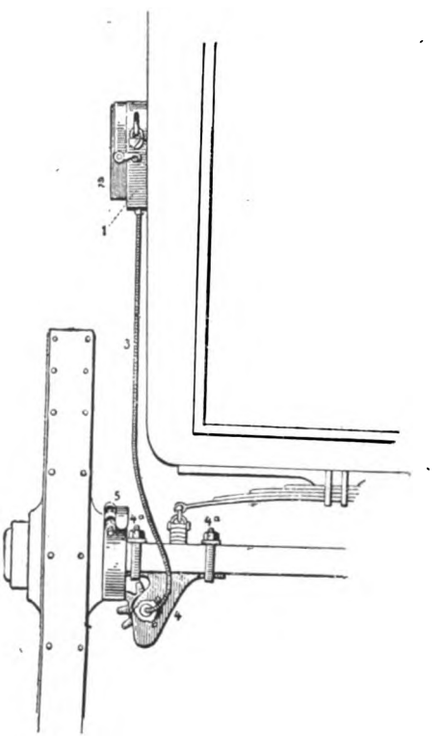


gages the spiral of the hub ring. The flexible transmitter is then drawn downward through the center hole in the clamping frame and attached, without too much slack, to the pinion. A loose sleeve is fixed in the side of the pinion bracket; this is removed and the transmitter drawn through it and fastened by a pin. The sleeve is then replaced and the device is ready for operation.

It will be seen that the disks are divided off into hours, exactly as are clock faces. The subdivisions, however, are different, being arranged according to the quarter hours. A pointer—seen near the bottom of the disk—connected with the transmitter and actuated by it, bears against the disk at all times; as the latter is continually revolving, the pointer makes a record even when the car is motionless, the record being circular in form. When the car starts up the pointer is actuated through the pinion and transmitter, so that it makes a zig-zag mark. If the speed is slow the marks have a considerable angle, while as the speed increases the angle is decreased until the lines become almost straight. At the completion of every mile the pointer springs back to its starting point on the outer periphery of the disk. As the disk is subdivided into hours and minutes, corresponding exactly to a clock dial, it is easy to read off the time taken to cover a given distance, together with the stoppages. As long as the car is at a standstill the pointer traces a circular line, whose length shows the duration of the stoppage.

Any irregularity in the day's work, such as driving too fast or too slow, or prolonged stoppages, is immediately apparent. The inner part of the disk can be used for remarks, such as the number of the van, date, etc. The total mileage travelled can be checked by noting the mileage shown on the automatic counter at starting and on returning.

To a Motor World man Charles E. Miller stated that much interest was being shown in the Velograph. Several of the big depart-



ment stores are now testing them on horse-drawn as well as motor, vehicles, having had hub rings made especially for the purpose. The device has been used in Germany for some time, and has proved entirely practical.

The Inventor of the Differential.

Comparatively few motorists know that the differential, or balance gear, without which no gasolene or steam automobile could be built, was invented by James Starley, a famous English cycle maker. The tricycle was originally built without means of varying the speed of the two rear (driven) wheels, and in that form was a very imperfect vehicle. Starley applied himself to the task of inventing a device that would permit one wheel to travel faster than the other—as in turning corners. In some form or other a compensating device is used on practically every automobile built, with the exception of electrics using two or more motors.

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NO LONGER A MYSTERY

Cause of the Horseless Bray at Last Made Plain and Real Sport Clearly Indicated.

It is now small wonder that the Horseless Age shuddered and exclaimed "Fudge!" at the very thought of the race for the Vanderbilt race. It is of even less wonder that its absent view of the race led it to describe the actual competition a "barbarous exhibition," and to style "idlers" and "gamblers" the thousands of poor, deluded, ice watery individuals who witnessed the "barbarity" of "no earthly use" to any one.

While the miserable "idlers" and "gamblers" were indulging their "morbid cravings" to the full, what was the Horseless Age doing? Working tooth and nail for the promotion of genuine sport! Working like a slave that the walls of a town hall might look pretty—working that the eyes of womankind might rest upon pictorial presentments of vehicles of the same splendor which engaged in the barbarous performance on Long Island—working that the ladies, while thumbing the same cards with which detestable gamblers ply their trade, might be inspired by the spirit of gasolene. Ah! it was a work for men—was that in which the Horseless Age engaged. It was a work to wring cries of "Fudge!" from any man with real red blood in his veins and real wind-kissed whiskers on his face. Most of those in the trade—the same "idlers" and "gamblers" who viewed the barbarous race—know the magnitude of the task; for did they not receive communications informing them of its extent and helpfulness. The communication was not copyrighted. It is therefore possible to print it in its own glowing terms. Read it, every one of you, and, having read, reflect. This is it:

> Gentlemen: I have been requested by the ladies of the suburb where I reside to endeavor to procure some automobile posters for an automobile euchre entertainment which is to be held in the town hall in the near future. Quite a number of machines are already owned there, and possible purchasers are numerous. Posters will be put up conspicuously, and will, no doubt, to some extent help the cause. If you have any advertising matter of this character on hand I should be pleased to receive it for this purpose, as also any small cards or leaflets illustrating any single model of your manufacture. For the latter cardboard is preferred.
>
> Sincerely,
> THE HORSELESS AGE.

It will be noted that there are "I's" even in a Horseless Age.

Up to the middle of this month there were 320 automobiles registered in Milwaukee, Wis.

Club and Christians Will Study.

There is every prospect that an arrangement will be made whereby the Springfield (Mass.) Automobile Club and the Y. M. C. A. of that city will join in giving a class in automobile instruction this winter. Meetings have been held and committees appointed with this object in view.

As was told last week, the club has already made arrangements for a series of meetings, with lectures and demonstrations at the various factories and garages. In this undertaking the educational branch of the Y. M. C. A. will probably co-operate. A meeting of the latter was held last week, at which the plan of organizing such a class was discussed and met with much favor. A committee was appointed to look into the details of the plan and report later to the committee.

St. Louis Also Forming a Class.

St. Louis, Mo., is the latest addition to the cities which will conduct automobile instruction classes this winter. As is the case in a number of other places, the Y. M. C. A. is the initiating body.

In connection with the Ralph Sellew Institute, the association will give a thorough course of lectures on the care and running of automobiles. A course of ten lectures has been arranged.

G. P. Dorris, of St. Louis, will deliver the opening lecture on gasolene motors, and will be followed by three lectures on steam motors, by W. W. Leathers, and three lectures on electric motors by C. C. Clark, during the months of October and November, when other lecturers will take the stand.

Springfield's New Slate.

An entirely new set of officers was elected by the Springfield (Mass.) Automobile Club at its annual meeting last week. They are as follows: President, L. J. Powers, jr.; vice-presidents, Mark Aitken, Dr. George H. Finch, Dr. J. W. Hannum and Willis Anderson; secretary, Dr. George Fenn; treasurer, W. L. Bunker; directors, Dr. V. J. Irwin, A. B. Chase, Harry Daniel, Dr. F. E. Hopkins, A. A. Geisel, William Baush and Frank Bocorselski.

Princetonians Elect Frick President.

The Automobile Club of Princeton University held its annual election of officers last week, with the following result: President, Childs Frick, Pittsburg; vice-president, S. H. Bird, New York City; treasurer, J. S. Martin, Belleville, N. J. The club has a membership of thirty, and may hold some speed trials in November.

Gold Watch For Lyttle.

As a token of his appreciation of Herbert H. Lyttle's splendid performance in the Vanderbilt Cup race with a 24 horsepower Pope-Toledo, Colonel Albert A. Pope has presented the skilful driver with a handsome gold stop watch and chain.

DECLARED LAW OPPRESSIVE

Illinois Judge Shocks His Rural Neighbors by Nullifying a Ridiculous Speed Limit.

Dixon (Ill.) motorists will ask the council to pass a new ordinance in place of the six miles an hour one which Judge Heard recently declared invalid. In place of the six miles clause, they want automobiles limited to a "reasonable rate" of speed.

Some members of the council, on the other hand, want Judge Heard's decision appealed from and the case carried to the Court of Appeals. It is believed that such action will be taken.

The obnoxious ordinance was passed several months ago, and, in order to test its legality, Egbert R. Kent so arranged matters that he was arrested on the charge of violating the regulation and was given a trial before a police court. He pleaded guilty to the charge and was fined $20. He appealed the case to the Lee County Circuit Court, with the result of securing a reversal of the sentence. Judge Heard, in handing down his decision, says:

"The ordinance limiting the rate of speed of automobiles to six miles an hour is unreasonable and void because the speed limit is too slow. Said ordinance is void because it is oppressive; said ordinance unduly discriminates against automobiles and is void; said ordinance is void because while in some business portions of the city of Dixon the rate of speed might be limited to six or eight miles an hour and be reasonable, yet in other portions of the city the speed limit of six miles an hour is unreasonable, oppressive and tends to create a monopoly in favor of means of travel not included in the ordinance or expressly excepted from its operation."

Two States in One Club.

The annual meeting of the Missouri and Kansas Automobile Club was held at Leavenworth, Kan., on October 15 with an attendance of fifty members. Committees were appointed to prepare road maps of Kansas and Missouri and to work with the farmers of the two States in an effort to secure good roads. Some of those present made the trip from Kansas City, Topeka and Atchison in their machines. Next year's meeting will be held at Kansas City. The following officers were elected: President, Omar Abernathy, Leavenworth; vice-president, H. H. Strait, Kansas City; secretary, Edward Osborne, Topeka; treasurer, Dr. Beitzel, Atchison.

New Britain Motorists Organize.

Motorists of New Britain, Conn., met last week and organized a club, to be known as the New Britain Automobile Club. These officers were elected: President, Philip Corbin; vice-presidents, Howard S. Hart, George S. Landers; secretary, W. L. Hatch; treasurer, H. S. Damon.

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FARSON FIGHTS ON

Chicagoan and Two Kindred Spirits Refuse to Surrender and Spring a Midnight Injunction.

Just when everything seemed to be lovely and the goose was honking at its highest possible elevation, the Chicago automobile ordinance imbroglio took on a new and startling phase. As a result the situation is again mixed and things are at sixes and sevens.

As related in last week's Motor World, the backbone of opposition to the numbering and licensing provision appeared to have been broken. The members of the Chicago Automobile Club were rejoicing over their ignominious and utter defeat; President Farson had gone to St. Louis in disgust, and Frank X. Mudd—what's in a name?—and one lone companion were left standing on the burning deck and proclaiming that they never, never would give up the ship. The city officials were ready to begin their crusade against unregistered and unnumbered motorists, and a day was set to make wholesale arrests.

Suddenly, like a bolt from the blue, came a counter stroke, planed and set in operation by the never-say-die Farson. That arch plotter came back from St. Louis, and, with his lawyers, sought out Judge Hanecy, explained that the three park boards were about to make wholesale arrests, and at 11 o'clock at night secured from him an injunction against these organizations and their police restraining them from interfering with President John Farson of the Automobile Club, Frank X. Mudd or Thomas J. Hyman. These three automobile owners were the petitioners, but it is understood the writ will apply to all chauffeurs who wish to run their machines without a city number tag.

The "coup" of President Farson and his two associates was a complete surprise to the city and park officials, who were looking forward with much pleasure to the raids planned.

Late in the night Attorneys Chester M. Masslich and Charles F. Davies went to Judge Hanecy's residence and laid the case before him. The park officials, they stated, were preparing to arrest all automobile drivers who ventured on the boulevards ungraced by a large tin sign issued by the city authorities. They thought this was all wrong.

So did Judge Hanecy, and forthwith he granted the injunction prayed for by Masslich and Davies. The writ was issued without notice, and will last until such time as the attorneys for the park boards can convince Judge Hanecy it is unjust. As Mr. Farson's lawyers said at midnight, "It is up to the other fellows now."

On Sunday the police made wholesale raids on untagged cars, capturing more than forty-four in all. They were careful to respect Judge Hanecy's injunction, however, and Messrs. Farson, Mudd and Hyman were let severely alone.

Will Finally Test Ferry Law.

The Automobile Club of America has taken steps to test the obnoxious ferry law which prohibits passenger boats from carrying automobiles in which the fires have not been extinguished. At the instigation of the A. C. A., Assistant United States District Attorney Baldwin will begin suit against the Brooklyn Ferry Co. for violating the law, which carries a penalty of $500 for each violation. Mr. Baldwin has the papers, but will not be able to begin work on the case until next week owing to press of other business. The suit will be entered in the name of Collector Stranahan of the Port of New York.

Last August Jefferson Seligman and William W. Niles, attorney for the club, went to Washington to see Secretary Metcalf of the Department of Commerce and Labor in regard to securing a more liberal interpretation of the law. Their efforts were without success, as they were told that Congress would have to pass another law or amend the present one before there would be any relief. It is the interpretation rather than the existing law itself which has made so much trouble for automobile owners and drivers since the Slocum disaster frightened the government officials out of their wits.

It is the contention of the club's legal adviser that the present law is not broken when a gasolene automobile, with the engine running, is carried on a ferry. The claim is made that an explosive gasolene engine does not contain fire, and for that reason the present law is not a bar to the transportation of cars with the engines running. The matter is to be thoroughly thrashed out by the A. C. A., and if the decision of the first court goes against the club an appeal to a higher court will be taken. In any event, no relief can be expected very soon, as it will be impossible for the case to be tried until December, while January is a more likely time for the trial.

How Road Racing Betters Cars.

An "official" explanation of the poor showing of the Panhard cars in the Bennett Cup trials last summer has made its appearance. All three cars entered for the French eliminatory race in the Ardennes broke down, it will be remembered, after one or two rounds. The Panhards had always done so well in previous races that at first sight the fact that all three machines gave out appeared perplexing. The matter was soon cleared up. The firm had made a mistake in not providing sufficiently large radiators. For short runs the motor kept tolerably cool, but in a race extending over 250 miles, the cooling surface proved inadequate, and the drivers could make no headway. Needless to say, the firm at once took the machines in hand and altered the defective part, with good results.

While of small general interest, the incident serves to show how road racing contributes to the betterment of cars—a fact which euchre-promoting Horseless Ages and others of that ilk seem unable or unwilling to comprehend.

RECORDS THEY MADE

Kiser and Gorndt Secure What They Sought and Considerably Alter the Record Table.

Fuller details of the record breakings of Charles Gorndt and Earl Kiser at Cleveland on Wednesday of last week, bare facts of which were published in last week's Motor World, show that each man annexed not merely the particular record he sought, but a long string of intermediate times.

Gorndt, who attacked the fifty-mile figures, used the Winton Baby Bullet. He tried first and created new times from twenty-one to fifty miles, inclusive. Kiser, in the Winton Bullet No. 2, sought the twenty-five-mile record, and captured it, of course. En route he also wiped out the figures from sixteen to twenty-five miles, which Gorndt had just set up.

The performance of each man is shown by the following tables:

CHARLES GORNDT'S RECORDS.

Mile.	Single mile.	Total.	Mile.	Single mile.	Total.
1	1:06⅝	1:06⅝	26	1:03⅝	29:07½
2	1:06⅝	2:13⅛	27	1:03⅝	30:11
3	1:07⅝	3:20⅝	28	1:03⅝	31:14⅝
4	1:08⅝	4:29	29	1:02⅝	32:17⅝
5	1:08⅝	5:37⅝	30	1:03⅝	33:20⅝
6	1:07½	6:44⅝	31	1:04½	34:25
7	1:09¾	7:54	32	1:04⅝	35:29⅝
8	1:09⅝	9:03⅝	33	1:05⅝	36:35⅝
9	1:13⅛	10:16⅝	34	1:05⅝	37:41
10	1:17⅛	11:33⅝	35	1:05⅝	38:46⅝
11	1:15⅛	12:48⅝	36	1:06⅝	39:53
12	1:11⅜	14:01⅛	37	1:07⅞	41:00⅝
13	1:08⅝	15:09⅝	38	1:08	42:08⅝
14	1:07⅝	16:17⅛	39	1:06⅝	43:14⅝
15	1:05⅛	17:22⅝	40	1:05⅝	44:20⅝
16	1:04⅛	18:26⅝	41	1:05⅝	45:26
17	1:04	19:30⅝	42	1:06	46:32
18	1:03⅝	20:34⅝	43	1:07⅛	47:39⅝
19	1:03⅝	21:38⅛	44	1:07⅛	48:47
20	1:04⅛	22:42⅝	45	1:08⅝	49:55⅝
21	1:04⅛	23:47	46	1:08⅝	51:04
22	1:05⅝	24:52⅝	47	1:09	52:13
23	1:03⅝	25:56	48	1:09⅛	53:22⅛
24	1:03⅝	26:59⅝	49	1:10⅛	54:32⅝
25	1:03⅝	28:03⅛	50	1:09⅝	55:42

EARL KISER'S RECORDS.

Mile.	Old record.	Holder.	Single mile.	Total.
1	0:52⅝	Kiser	0:58⅝	0:58⅝
2	1:53⅝	Basle	0:58⅛	1:56⅝
3	2:47⅝	Basle	0:58⅛	2:55⅝
4	3:42⅝	Basle	0:58⅜	3:54
5	4:37⅝	Basle	0:58⅜	4:52⅝
6	5:32⅛	Basle	0:58⅛	5:50⅝
7	6:26	Basle	0:58⅛	6:48⅝
8	7:21	Basle	0:57⅞	7:46⅝
9	8:17	Basle	0:57	8:43⅝
10	9:13	Basle	0:57⅛	9:40⅝
11	10:20¾	Oldfield	0:56⅝	10:37
12	11:27¾	Oldfield	0:57	11:34
13	12:25¾	Oldfield	0:57	12:31
14	13:23¾	Oldfield	0:57	12:28
15	14:21	Oldfield	0:56	14:24
16	15:41⅝	Sartori	0:56⅝	15:20⅝
17	16:39⅝	Sartori	0:56⅝	16:17
18	17:38⅝	Sartori	0:57	17:14
19	18:37⅛	Sartori	0:57	18:11
20	19:37½	Sartori	0:57⅞	19:08⅝
21	23:50⅜	Harkness	0:56	20:04⅝
22	25:04⅜	Harkness	0:57	21:01⅝
23	26:12⅜	Harkness	0:58⅛	21:59⅝
24	27:22½	Harkness	0:58⅝	22:58
25	28:40⅝	Harkness	1:01	23:59

Tall Track Tale From Muskegon.

From Muskegon, Mich., comes a wonderfully weird tale of a five-mile automobile track which is to be built on a level tract of land there near the stockyards. Dr. J. B. Love is one of a committee said to have been recently appointed by the A. A. A. to fix the location of the course. He says it will be 125 feet wide and circular, and that it can be built at a cost of $1,200 a mile. A large hotel and a grandstand are to be part of the plant. When the track is completed it is to be presented to the A. A. A. upon condition that all of the national and international races be held there.

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BIGGEST CROWD; POOREST RACING

Oldfield's Funk Helps Spoil Brighton Meet—Bernin Does Good Work—Wridgway's Spill.

Of much more interest than the exhibition of so-called racing at the Brighton Beach (New York) track on Saturday were the immense crowd of spectators and the tremendous aggregation of cars that a mid-fall day glorious in its promise but a trifle boisterous in its fulfilment drew to the track by the sea. A sorely perplexed and considerably frightened horse in the infield attracted much attention and provided the element of mirth that was sadly needed to put the spectators in a good humor.

As a race meet the affair is to be put down as an utter failure. Save in the Brighton Handicap, where a really close finish developed, there was no racing. Many previous meets have been marred by runaways, flukes and break downs, but all of them had alleviations or extenuating circumstances. Saturday's meet had nothing of the kind. It was duller than ditch water.

Rarely, even when the big Brighton Handicap is run at this track, has there been a larger or more "classy" gathering than journeyed thither on Saturday to witness automobile racing. The heavy rain of Friday morning had effectually laid the dust and made fine going over the roads leading to Coney Island. There was just a touch of winter in the atmosphere, and the searching wind, which became stronger as the afternoon drew to a close, made heavy and voluminous wraps very acceptable to those who came in cars, and even to many who did not. The gathering of cars even surpassed those at the Empire City track, both in numbers and variety. Parked in the betting ring, on the lawn and in front of the clubhouse, they made an impressive showing. The number almost reached five hundred.

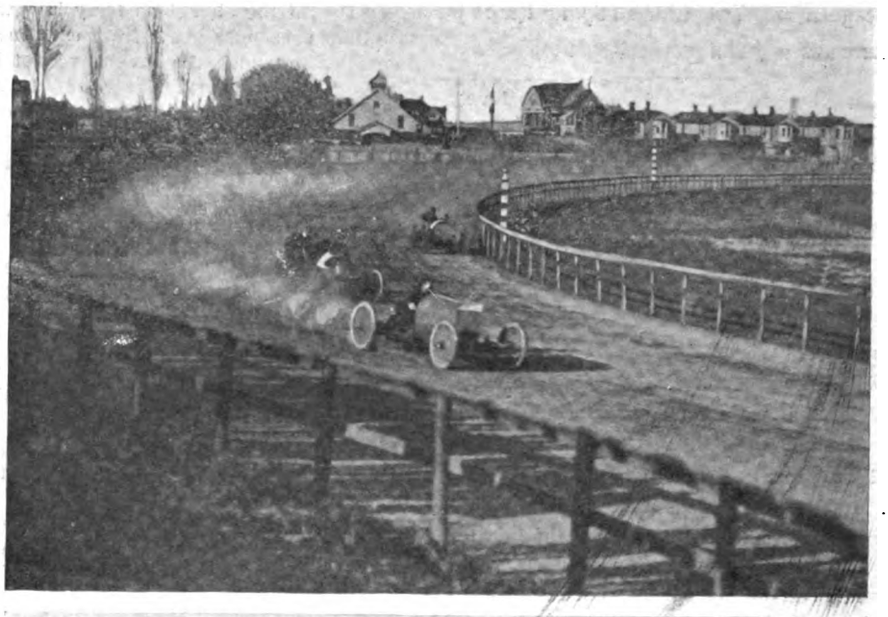
The spectators were conservatively estimated at ten thousand.

The unexpectedly large attendance caused a shortage in both the programme and sandwich supplies. Programmes were unbuyable after 3 o'clock, while around 4 o'clock sandwiches were sold at $1 each.

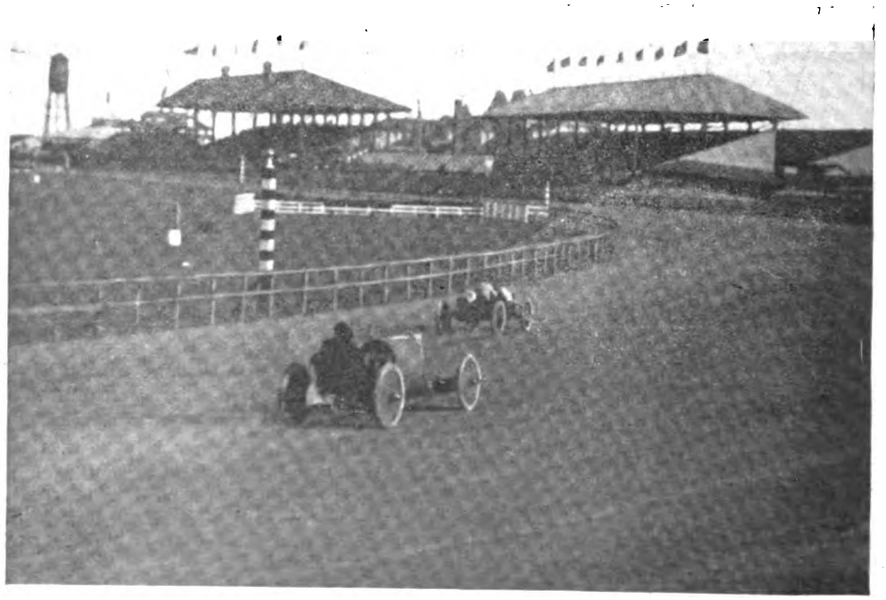
Thery and Callois, the two French racing men, were spectators, and were not favorably impressed with track racing—which is scarcely surprising in view of the sample on view. E. R. Thomas's new car was there in charge of E. E. Hawley.

The most sensational episode of the day occurred late in the afternoon, just after the finish of the Diamond Cup race. C. G. Wridgway, manager for Banker Bros'. New York branch, in a 24 horsepower Peerless, had finished and had nearly circled the track again when the breaking of his seat, made of perforated sheet metal, nearly threw him out and rendered it impossible for him to guide the car into the straight. The car, after gyrating violently on the track, made a

Three Views of the Racing.

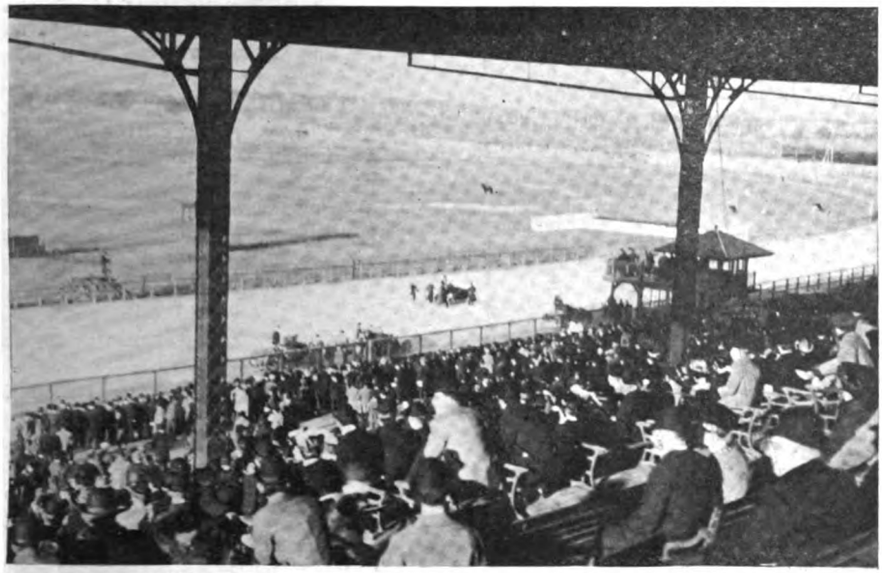






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Three Views of the Crowd.





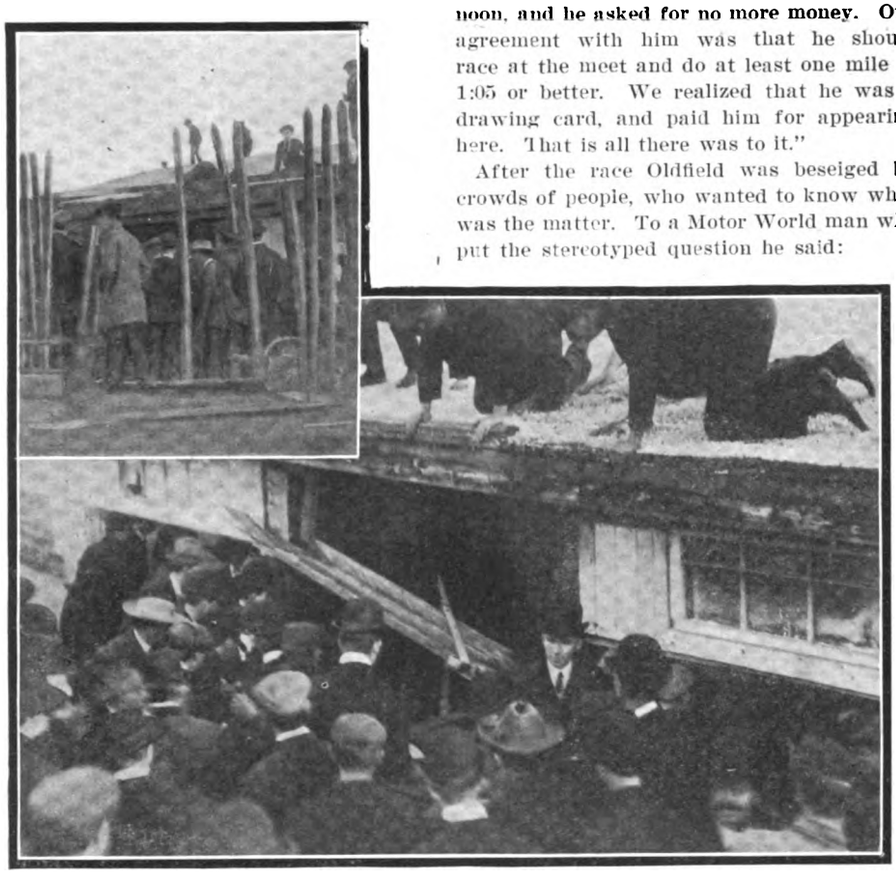


bee line for a row of stables at this point, on the low roof of which a number of spectators were perched. The tall picket fence dividing the track from the grounds was crashed into and went down as if it had been cardboard; with its speed unchecked the car next went into a low, whitewashed fence immediately in front of the stable, broke it and charged full into the stable, being stopped by the rear wall. Wridgway jumped before hitting the first fence and escaped with a strained wrist and a cut under the eye. He was able to be about on Monday. The car also got off remarkable well. It did not overturn, and nothing was broken except the right hand front wheel, which had its spokes sheered off. The axle end was badly twisted, but beyond this a close examination showed nothing wrong.

The chief influences at work in marring the meet were, first, that bane of automobile racing, absenteeism, and, second, the pitiable exhibition of driving given "by the champion automobile driver of the world, Barney Oldfield," as Announcer Prunty phrased it. The entry lists showed splendid fields for each race, but the ranks were greatly depleted by the non-starters, prominent among whom were Frank Kulick (Lord) and H. S. Harkness (Walter). Kulick's entry was received in due form, but he did not appear, and no reason was or has been assigned for his non-appearance. Harkness was at the track with his car, but an attack of disease diagnosed as "too much power" had put the latter hors de combat. The new E. R. Thomas 90 horsepower Mercedes was also looked upon as a starter, but as it had not been "tuned up" sufficiently it was scratched a few days prior to the races. With Kulick also out and A. G. Vanderbilt's huge Fiat, driven by Sartori, unable to negotiate the track at anything like its full speed, the feature of the meet, the international race, was practically left to be fought out by Oldfield (60 horsepower Peerless) and Bernin (60 horsepower Renault). When the former showed the white feather the race became a walkover—almost a farce.

The preliminaries of this race, which was the second one to be run, were most appetizing. Bernin and Oldfield won their heats handily, and Sartori got a place in the final through a walkover. Three countries were then represented—France, Italy and America—and excitement ran high. Oldfield's spectacular make-up—a loose, blouselike coat of flaring green, which matched the color of his car, the Green Dragon, topped by a shock of uncovered hair and with an unlighted stump of a cigar stuck aggressively in his mouth, appealed, as it was intended to appeal, to the gallery, and he was easily the cynosure of all eyes. Bernin suffered by comparison. He was clothed in nondescript chauffeur's garments, and was as untheatric in appearance as his rival was the reverse. Nor was the simile destroyed when the men were sent away after one false start. Oldfield was stagy, Bernin was businesslike. The Cleveland man at first hugged the pole—he had the inside berth at the start—and maintained

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IMMEDIATELY AFTER WRIDGWAY'S CAR HAD PLUNGED THROUGH THE FENCE AND INTO THE STABLE.

a slight lead. But after the first mile he resumed his old tactics of swinging wide on the turns and taking the straights on the outside, thereby losing several hundred feet in each mile. This proved his undoing, for as they started on the third mile Bernin, who was following close and causing Oldfield to increase speed, kept to the middle of the track and went by, taking the lead on the turn. Thereupon Oldfield sat up and practically quit. Bernin left him further and further in the rear, and even Sartori came up and passed him. The spectators, who had risen to their feet in ecstasy at the promise of a splendid race, set down again and sighs and cries of disappointment arose on every side. A man on the rail offered the pertinent suggestion to Oldfield that the green of the Dragon should be diversified with a streak of yellow.

All sorts of stories were afloat concerning Oldfield's almost inexplicable action. One tale bandied around was that he had struck for more money upon seeing the size of the crowd, and, this being denied him, he had lived up to the letter of his contract, which called for a mile in 1:05 or better, and then quit. Some even went so far as to say that he carried a stop watch and timed his miles. That there was nothing in this story was made plain by Manager Alfred Reeves of the promoting club. To the Motor World man's question he replied:

"Not a word of truth in it. I never had any conversation with Oldfield that afternoon, and he asked for no more money. Our agreement with him was that he should race at the meet and do at least one mile in 1:05 or better. We realized that he was a drawing card, and paid him for appearing here. That is all there was to it."

After the race Oldfield was beseiged by crowds of people, who wanted to know what was the matter. To a Motor World man who put the stereotyped question he said:

"There is nothing the matter with the car; it was me that was wrong," and he grimly chewed the end of his cigar and did not even leave his seat to examine his car before the next race was called.

Later he explained more fully. He said that the track was narrow, with bad turns, and the heavy rain of Friday had left it soft and rutty in some places. The Green Dragon is a light car, only weighing 1,700 pounds, and at high speed it was very difficult to manage it on the turns. When Bernin pressed him on the third mile he increased his speed to the danger point, and it was not until he was within six inches of the outer fence, with Bernin still gaining, that his nerve deserted him. He thought of his St. Louis accident, where he had dashed into a fence with fatal results, and he saw, in his mind's eye, a repetition of that tragic occurrence and then he weakened.

Apparently the weakness did not pass away speedily, for throughout the afternoon he was unable to drive fast. He even asked to be excused from driving in the Brighton Handicap, alleging the poor condition of the track. Referee Pardington "put it up" to the judges, and they decided by a vote of two to one that he must start at least. This he did, but gave a farcical exhibition, even losing ground to cars that had starts on him.

Bernin and his new Renault racer, the latter owned by W. G. Brokaw, were easily the real stellar attractions of the meet. The car, the first speed production of the famous French firm since the Paris-Madrid race, is marked by an immense horseshoe shaped tubular radiator, partly encircling the rear portion of the bonnet. It ran grandly, silently and without a hitch or a skip. Its driver, Bernin, handled it to perfection. He took the turns without falter and without leaving the pole, and was literally "burnin'" up the track in his rapid flight. In the final heat of the international race he plainly took Oldfield's measure, gauged the latter's speed and took advantage of his tactical error in seeking the outside of the track by going by and leaving Oldfield a nerveless wreck. His time in the fifth mile of the international race —0:58 3-5—was the fastest of the day and is a record for the track.

The two men met again a few minutes later in the five-mile race for the Diamond Cup. Wridgway was the third starter, with a 24 horsepower Peerless touring car. Oldfield got away first, led to the turn and into the backstretch. Here he again slowed down and permitted Bernin to pass him and win as he pleased by three-quarters of a mile in 5:08 3-5, with Wridgway an eighth of a mile further back.

The heats of the Brighton Handicap were uninteresting, so widely separated were the cars, although at the finish of the second there was a close race. A recasting of the starts for the final bettered matters considerably. A good race resulted in Lewis Nixon's new 25 horsepower Standard, which received 115 seconds, beating Bernin, a 25-second man, by 100 yards, with Vaughn, who had 45 seconds, third, fifty yards back. Summaries:

Seabreeze Cup (one mile; handicaps according to price)—Won by L. T. N. Baldwin (10 horsepower Stanley), 300 yards; Rodney Peeler (10 horsepower Autocar), 100 yards, second; Clyde Adams (8¼ horsepower Cadillac), 250 yards, third. Time, 1:27 1-5.

International Cup (trial heats, three miles; final, five miles)—First heat (French machines) won by M. G. Bernin (W. G. Brokaw's 60 horsepower Renault); Guy Vaughn (40 horsepower Decauville), second; time, 3:06 2-5. Second heat (Italian cars)—Walkover for Paul Sartori (A. G. Vanderbilt's 90 horsepower F. I. A. T.). Third heat (American cars)—Won by Barney Oldfield (60 horsepower Peerless); C. G. Wridgway (24 horsepower Peerless), second; time, 3:25 3-5. Final heat—Won by Bernin; Sartori, second; Oldfield, third. Time, 5:05 3-5.

Diamond Cup (five miles, free for all)—Won by M. G. Bernin (W. G. Brokaw's 60 horsepower Renault); Barney Oldfield (60 horsepower Peerless), second; C. G. Wridgway (24 horsepower Peerless), third. Time, 5:08 3-5.

Brighton Handicap (five miles): First heat —Won by Rodney Peeler (10 horsepower Autocar), 225 seconds; M. G. Bernin (W. G. Brokaw's 30 horsepower Renault), scratch, second; Philip Adams (25 horsepower Standard), 35 seconds, third; time, 8:49 4-5. Second heat—Won by Guy Vaughn (40 horsepower Decauville), 50 seconds; C. G. Wridgway 24 horsepower Peerless), 45 seconds, second; Barney Oldfield (60 horsepower Peerless), scratch, third; time, 6:49. Final heat—Won by Philip Adams; M. G. Bernin, second; Guy Vaughn, third. Time, 8:17.

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BIG FEE; SMALL CROWDS

Los Angeles Raises the "Ante" and Loses—Fast Times the Rule on Both Days.

Los Angeles, Oct. 24.—Due to an overreaching desire to make much hay while the sun shone, the second annual meet of the Automobile Club of Southern California was not what it might have been. While more than one thousand spectators were present each day, there is no doubt that the price exacted for a seat in the grandstand, $2.50, kept away very many more thousands, particularly as the sun shone brilliantly and all other weather conditions were perfect.

Although the races occupied all of Friday and Saturday afternoons, there were so many of them, and they were so long drawn out, that it was necessary to postpone two of them until this morning.

The races themselves were fairly interesting, fast times being the rule. Frank A. Garbutt, in his California made car, which ran into trouble on a previous occasion, "made good" this time by reeling off a mile in 57 2-5 seconds, which was hailed out here as the "world's amateur record," although the A. A. A. does not differentiate between performances by amateurs and professionals.

George P. Fuller, in his Pope-Toledo, was conspicuous also, his mile in 1:00 3-5 in the Coast championship event being the "American record for an American stock car driven by an amateur." His car narrowly escaped destruction on the first day. He used 86-degree gasolene, which, leaking from the tank, was ignited by spark gaps that he employed. It was saved by a couple of quick-witted fellows, who seized a plank and knocked off the tank. The car was damaged, but not enough to prevent its use the next day.

While Pope-Toledos won the lion's share, the victories were pretty well distributed, as the following summaries show.

FIRST DAY, OCTOBER 21.

Five miles, for 10 horsepower cars costing $1,000 or less—Won by David Campbell, Los Angeles (Ford); R. C. Hamlin, Los Angeles (Pope-Hartford), second; A. Hoxie, Los Angeles (Royal Tourist), third; W. G. Hanson, Los Angeles (Hanson), fourth. Time, 6:30; fastest mile, 1:16 1-5.

Five miles, for American touring cars in touring condition—Won by W. McDonald, San Francisco (Pope-Toledo); H. D. Ryus, Los Angeles (White), second; H. C. Turner, Los Angeles (Peerless), third. Time, 7:01 2-5.

Five miles, for cars of 15 horsepower or less, one or two cylinders, costing $1,000 or less—Won by David Campbell, Los Angeles (Ford); A. Hoxie, Los Angeles (Royal Tourist), second; W. G. Hanson, Los Angeles (Hanson), third. Time, 6:34 1-5. Fastest mile, 1:16.

Five miles, for gasolene cars of 24 horsepower or less—Won by Frank Siefert, Los Angeles (Thomas); Thomas Elliss, Los Angeles (Thomas), second; W. K. Cowan, Los Angeles (Rambler), third. Time, 6:38; fastest mile, 1:18 1-5.

Five miles, for cars of 30 horsepower or less—First heat: Won by Frank A. Garbutt, Los Angeles (Stewart-Garbutt); M. S. Harris, San Francisco (Pope-Toledo), second; H. M. Zier, Pasadena (Thomas), third. Time, 5:15. Fastest mile, 1:00. Second heat: Won by Bert Dingley, San Francisco (Pope-Toledo); E. D. Keller, Los Angeles (Peerless), second; H. C. Turner, Los Angeles (Peerless), third. Time, 5:38 2-5. Final heat—Won by Garbutt; Dingley, second. Time, 5:25. Fastest mile, 1:00 3-5.

Australian pursuit race—Won by H. M. Zier, Pasadena (Thomas); A. Hoxie Los Angeles (Royal Tourist), second. Time not taken.

SECOND DAY, OCTOBER 22.

Five miles, for Huntington $1,000 Challenge Cup—First heat: Won by George P. Fuller, San Francisco (Pope-Toledo); H. C. Turner, Los Angeles (Peerless), second. Time, 5:23. Second heat: Won by Frank A. Garbutt, Los Angeles (Stewart-Garbutt); M. Harris, San Francisco (Peerless), second; J. D. Hill, San Francisco (Mors), third. Time, 5:43 3-5. Final heat: Won by Garbutt; Fuller, second. Time, 5:14. Fastest mile, 0:57 2-5.

Ten miles, for road cars of 15 to 24 horsepower, costing $2,500 or less—Won by Frank Siefert, Los Angeles (Thomas); H. M. Zier, Pasadena (Thomas), second. Time, 13:54 1-5.

Five miles, championship of Pacific Coast automobile clubs, for Lowe Challenge Cup—Won by George P. Fuller, Automobile Club of California; M. S. Harris, Automobile Club of California, second; H. C. Turner, Automobile Club of Southern California, third. 5:22 2-5. Fastest mile, 1:00 3-5.

Five-mile International Free-for-All—First heat: Won by George P. Fuller, San Francisco (Pope-Toledo); E. D. Keller, Los Angeles (Peerless), second. Time, 5:18 2-5. Second heat: Won by Bert Dingley, San Francisco (Pope-Toledo); M. S. Harris, San Francisco (Peerless), second. Time not taken. Final heat: Won by Dingley; Fuller, second. Time, 5:18.

Five miles, for touring cars, any make or power, carrying four passengers—Won by A. P. Witterauer, Los Angeles (White); W. McDonald, San Francisco (Pope-Toledo), second. Time, 7:34.

Five miles, Chanslor Challenge Cup—First heat: Won by Bert Dingley, San Francisco (Pope-Toledo). Time, 5:28. Second heat: Won by George P. Fuller, San Francisco (Pope-Toledo); H. C. Turner, Los Angeles ((Peerless), second. Time, 5:20. Final heat: Won by Dingley. Time, 5:09 3-5 (new record for California and Pacific Coast).

Ten-mile pursuit race—Won by Bert Dingley, San Francisco (Pope-Toledo); E. D. Keller, Los Angeles (Peerless), second; W. G. Schroeder, Los Angeles (Thomas), third; Frank Siefert, Los Angeles (Thomas), fourth. Time, 10:39.

"BIG THREE" WERE THERE

Oldfield, Kiser and Fisher Show at Grand Rapids—Small Accidents Cause Excitement.

Barney Oldfield, Earl Kiser and Carl Fisher were the magnets that drew four thousand spectators to the races at Comstock Park, Grand Rapids, Mich., on October 18. Fisher and Oldfield contented themselves with exhibitions, and Kiser competed in a match race, in which he drove a borrowed 24 horsepower Pope-Toledo against Barney Oldfield's helper. Though the famous Peerless Green Dragon was not seen in competition, it established some new track records in an exhibition. Oldfield's first appearance was in a five-mile exhibition, for which his time was 5:02 2-5, the fastest mile being the last, in 59¼ seconds. He later drove the Green Dragon in a three-mile exhibition in 2:52.

Carl Fisher had been expected to meet Kiser in a match race, but an accident put the Premier Comet out of commission. Fisher accordingly borrowed a Peerless and drove an exhibition of two miles in 2:08. William Starring, Oldfield's helper, won the event for touring cars with a Peerless, but was disqualified, as he was not a resident of Grand Rapids. Starring won his five-mile match from Kiser by half a length, Kiser driving a regular model Pope-Toledo. Mrs. Squires was leading in the first mile of the ladies' race when her machine was stopped by the brake setting. It whirled half around and stopped, but she was not injured. In the five-mile event, for medium weight cars, William Russell, in a Michigan, had a big lead at the end of the fourth mile, when he stopped, as he thought the race was over. In the last mile of the race J. R. Jackson struck the Cadillac driven by Ernest Kemp and sent it crashing into the fence. The Cadillac was overturned and badly damaged, but Kemp escaped injury. Summary:

Three miles, for runabouts costing $800 and less—Won by W. H. Leaver (Cadillac); H Bayer (Cadillac), second; Arthur Mesnard (Rambler), third. Time, 6:51½.

Two-mile ladies' race—Won by Mrs. George Hart (Franklin); Mrs. E. G. Squires (Ford), second. Time not taken.

Five-mile open—Won by William Starring (Peerless); William Russell (Michigan), second; John Thoma (Rambler), third. Time, 8:09.

Five-mile match between William Starring (Peerless) and Earl Kiser (Pope-Toledo)—Won by Starring. Time, 8:08.

Five-mile open, for cars weighing from 951 to 1,432 pounds—Won by J. R. Jackson (Franklin); C. E. Amsden (Franklin), second; William Russell (Michigan), third. Time not taken.

Five-mile race for touring cars, Grand Rapids drivers—Won by Mortimer Lace (Royal); W. S. Austin, second. Time, 8:46.

Three-mile invitation for Cadillac Cup—Won by Claude Hamilton; W. H. Leaver, second. Time not taken.

Five-mile handicap—Won by John Thoma (Rambler); W. E. Russell (Michigan), second; C. E. Amsden (Franklin), third. Time, 7:55 2-5.

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RUNAWAYS AT ST. LOUIS

Good Crowd Sees Indifferent Sport and Gets a Large Dose of Kiser Exhibitions.

Earl Kiser was the star of the races which were held last Sunday at St. Louis, though he only drove the Winton Bullet in three exhibitions. Several thousand spectators witnessed the races, though the cold weather undoubtedly affected the attendance. The memory of Oldfield's fatal accident there recently did not make the spectators any more cautious, for they lined the fence at the head of the stretch and in front of the clubhouse. None of the races were close, so that all of the contestants kept close to the rail and the crowd sat on the fence in safety.

Kiser's first appearance was in a five-mile exhibition to become accustomed to the track, his time being 5:49 3-5. His next ride was for ten miles, in 11:13. The sixth mile was the fastest, 1:06 1-5 being the time. Then Kiser tried for the track record of 5:25, held by A. C. Webb, and succeeded in placing it at 5:19. The first mile, in 1:02 2-5, was the fastest. The track was slow owing to the earth which had been used to bank the turns. C. A. Tileson won the first event for heavy cars carrying four passengers. His only opponent had trouble with his machine, which was out of the race after the first mile. W. M. Leathers had an easy time winning the five-mile event for medium weight cars from three opponents. Richard Hurck led the field for two miles in the five-mile motorcycle race, but his motor balked and he failed to secure a prize. The machines were limited to 110 pounds, and over a dozen started in the race, which was won by E. F. Martin, with 100 yards to spare. Summaries:

Five miles, for owners; road equipment; carrying four persons; weight 1,432 to 2,204 pounds—Won by C. A. Tileson; E. B. Godsey, second. Time, 8:30 2-5.

Five miles; flying start; cars weighing 1,432 to 2,204 pounds—Won by G. P. Dorris in straight heats; C. A. Tileson, second. Time—First heat, 6:23; second heat, 6:56.

Five-mile motorcycle race, 110 pounds limit—Won by E. F. Martin; T. Bahnsen, second. Time, 8:00.

Five miles, for cars weighing 881 to 1,432 pounds—Won by W. M. Leathers; Robert Britton, second. Time, 7:57.

Two miles, flying start, for cars weighing 881 to 1,432 pounds—won by E. B. Godsey; Robert Britton, second. Time, 3:28 2-5.

Five-mile exhibition, Earl Kiser. Time, 5:49 3-5.

Ten-mile exhibition, Earl Kiser. Time, 11:13.

Five miles against time, Earl Kiser. Time, 5:19.

It has devolved upon the Rev. A. C. Diffendorfer, of Plainfield, N. J., to call the much maligned "devil wagon" to the aid of the Church, as he has arranged that automobiles will be used to carry the infirm members of his flock to church.

A.A.A. Race Committee Meets.

The report of the committee of the American Automobile Association having the Vanderbilt Cup race in charge was formally accepted by the racing board of that organization at its meeting last Monday afternoon. It thereupon awarded first and second places to George Heath and Albert Clement, respectively. The refunding of the entrance fees to all the cars that entered and competed was also authorized.

Chairman A. R. Pardington presided at the meeting, which was held in the rooms of the Automobile Club of America. The other members present were William K. Vanderbilt, jr., James L. Breese, A. L. Riker and E. T. Birdsell.

A discussion regarding next year's race came after the transaction of the routine business, and was entirely informal in character. Chairman Pardington said afterward that no attempt had yet been made to consider the same Long Island course as either favorable or not for the next race. Many members are inclined now to favor a course that will offer more variety for an all round test of the machine.

"But with the variety," added Mr. Pardington, "we have got to consider the case of good roads. We may be able to get one of the desired qualifications without finding the other requisite, and good roads, just at present, seem to be the paramount necessity for a successful road race."

Considerable discussion arose over an abortive attempt to have the dates of the Ormond-Daytona races set back. The sanction of the A. A. A. racing board covers the days January 23 to 28 inclusive, and these were deemed by the managers of the Importers' Salon, the dates of which are January 11 to 24, to conflict with their exhibition. They asked, therefore, that the Ormond dates be changed. W. J. Morgan, on behalf of the Florida East Coast Automobile Association, vigorously opposed this, and presented maps and diagrams of the sun, moon and stars, which showed conclusively that the tides would be favorable only on the days for which the sanction had been granted. The A. A. A. board appeared to take the same view of the matter, for they refused to make any change in the dates.

Canadian Compete at Montreal.

The Automobile Club of Canada held its first race meet at Delorimer Park, Montreal, on October 15. Nearly every machine in the city was at the grounds and took part in the parade which finished the afternoon's sport.

Summaries:

Two miles, Stanley steamers—Won by L. D. Robertson; W. Carruthers, second. Time, 4:12.

Two miles, Queen gasolene cars—Won by Mr. Husson; L. D. Patenande, second. Time, 4:54½.

Two miles, Ramblers—Won by Dr. Arthur Wignault; Mr. Ahem, second. Time, 4:52.

Two miles, imported cars—Won by D. McDonald (Renault); D. Yuile (Panhard), second. Time, 3:49½.

Five miles, free-for-all—Won by L. D. Robertson (Rambler); D. McDonald (Renault), second. Time, 8:18.

BIG MATCH RACE ARRANGED

Four Famous Drivers to Contest on Empire Track—Oldfield's Chance to Redeem Himself.

On Saturday afternoon four world famous drivers in four world famous cars will meet in battle royal at the Empire City track, Yonkers, N. Y. Professionals all—or with possibly one exception—accustomed to risk life for the sake of gain, they will cast aside all, or nearly all, thought of lucre and strive for fame and reputation. Each man is eager to race and confident of winning, and to accommodate them and to let the public in on a "good thing" the Empire track management has arranged an impromptu meet, with this race as the piece de resistance and a few "specials" to garnish the feast.

The personages in this interesting drama are the following: Leon Thery, Gauloise, winner of the 1904 Bennett Cup race and, by virtue of that victory, a claimant to the proud title of "champion of the world," who will drive the 90 horsepower Georges-Richard car with which he achieved that success; M. G. Bernin, Franco-American, victor on many hard fought fields, conqueror of the once mighty Oldfield, of whom more hereafter, and driver of the latest speed car of the famous Renault house; Paul Sartori, Italian, a mighty driver in his own sunny land, but one who has yet failed to show top form here, who will handle the wheel and levers of Alfred G. Vanderbilt's new 90 horsepower Fiat racer, and, last of all, Barney Oldfield, American (with an Irish blending), erstwhile the daringest of drivers and the darling of speed lovers throughout the broad United States, but now dethroned, contemned and disconsolate, who will drive the 60 horsepower Peerless Green Dragon.

That it will be a sight worth going miles to see need scarcely be said. There will be personal contention, international emulation and trade rivalry to spur the men on. Thery and Bernin have reputations to maintain, Oldfield and Sartori reputations to regain. Each is confident of the outcome and impatient to obtain the word to go. Thery's hope is to return to France after a meteoric visit, exclaiming, "I came, I saw, I conquered!" Bernin seeks to repeat his victory of Saturday; Oldfield to turn the tables on his conqueror. That he can do this on the 100-feet wide Empire track the latter firmly believes, and he is ready to back his belief to the extent of his "pile"—common report places this at $5,000.

The men will race for a trophy and medals. The distance is ten miles, to be run in two heats and a final, two men in each heat and the winners in the final; the heats also to be at ten miles and the drawings for heats and places to be by lot. Standing starts are provided for in the heats. The fact that Oldfield's car has only two speeds is known to his competitors, hence the last stipulation. The races will start at 2:30 o'clock.

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PREPARING FOR WINTER

Some of the Things the Careful Motorist May do to Preserve His Car.

With the approach of winter a certain number of motorists will lay up their cars until the advent of spring. Those who make up their minds not to use their cars will do well to carefully put them to bed and tuck them up, making all comfortable and snug.

All water should be carefully drained out of radiator and tanks; this is best done after running the engine until the water boils and everything is piping hot. This will effectually dry up the interior of tanks and pipes. Gasolene tanks and carburetter should then be emptied of fuel, and the lubricating oil tanks and crank chamber should also be cleaned out and rinsed with kerosene. .

The careful motorist will take off his pneumatic tires, wrap them up carefully in brown paper (waterproof paper is best) and give a final overcoat of bagging. Pneumatic tires, if exposed to light and air, oxidize and the essential oils of the rubber become resinized and harden. In time this oxidation penetrates right into the rubber, and it becomes hard and brittle and breaks away when the tire is put on the road. A certain amount of elasticity may be restored to the tire by immersing it in boiling water, but this remedy is only a makeshift and providing the oxidation has not penetrated far. Therefore it is essential to keep the tires from light and air and in an equable temperature.

If the car owner does not wish to remove the tires, they should be carefully wrapped round with strips of coarse canvas and all four wheels jacked off the floor. The canvas strips should be thoroughly dusted with powdered sulphur, which preserves the rubber.

The car should be extra carefully washed down and all accumulation of mud and oily dirt thoroughly cleaned from every nook and cranny, joints and oil holes. All oil holes, joints, axle boxes, differential and gear case can then be filled up with grease.

Chains should be taken off, thoroughly washed in a kerosene bath, allowed to drain and then soaked in grease. Make the grease hot and lay the chains in it.

All metal parts should be well smeared with a mixture of white lead and tallow—about one part of lead to three parts of Russian tallow—the proportion is not by weight.

The house in which the car takes its winter's sleep should either be kept at a temperature of about 60 degrees both night and day or left cold all the time. If the place is warmed in the daytime only, the moisture in the air will condense on all cold parts of the car and do more damage than if left cold. Of course, it is better to warm the building, but it must be kept warm all the time. If the garage cannot be warmed it is advisable to store all loose cushions and other removable parts in a house away from damp, etc.



The Horse to His Half-Brother—"Your Blinders Are Turned the Wrong Way."

A kerosene lamp placed in the centre of a tray containing sand is a perfectly safe and cheap method of warming a small garage, but it must be kept burning continuously. The sand should be changed if the kerosene leaks on to it.

A sheet or calico waterproof should cover the whole of the car, and on bright, sunny days it will do good to open the doors, take the cover off and give all an airing.

About Valve Grinding.

After grinding valves it is often found that the compression is not so good as it should be, notwithstanding the fact that both valves and seating have been perfectly ground. It must be remembered that grinding tends to lower a valve, even if the action is very slight. It may be that the tappet rods do not allow the valves to close sufficiently. This is particularly true with the exhaust valve. Should the valve stem rest on the tappet rod, the end should be slightly filed or ground to shorten it to the extent that it does not quite reach the rod. It is a safe thing to allow sufficient space between the end of the rod and the valve stem to pass a piece of thin cardboard between the two when the valve is closed. If this space is not left the valve will rest on the tappet and the compression will be impaired.

Valve grinding is a tedious but very simple operation. Some fine flour of emery must be procured and mixed with oil to form a fairly thick paste. Smear some of this on the edge of the valve when the latter has been removed. Place some on the seating also. Drop the valve into place again. By means of a screwdriver or other tool, turn the valve round and round, and occasionally backward, using sufficient force to always keep it against the seating. Quite frequently take the valve out and see how the work is going on, but continue the grinding until both surfaces are absolutely bright and even all around, there being not the least mark anywhere. When the grinding is completed wipe all parts off carefully and see that all paste is off the valve and the seating.

If a microscope is used on even the smoothest surface turned out by man, it will be seen that, no matter what the surface under inspection is, it is full of inequalities. Pure flake graphite will fill these irregularities, substituting for it a veneerlike coating of great smoothness and endurance. The graphite may be introduced into the cylinder of an automobile by placing a very small quantity of it in the crank case—not over a teaspoonful to each quart of oil used. When the engine is standing the graphite will settle in the oil, but once it is in motion enough of the graphite is stirred up to fill all the pores of the cylinder walls.

Using the Teeth to Detect Trouble.

While the ear of the motorist is his chief detective when symptoms of trouble assert themselves, the tip comes from abroad that the teeth constitute an even surer means of locating internal distress. Hold one end of a steel rule between your teeth and apply the other against the side of the cylinder of a running motor, says the foreign tip, and it will "enable you to detect the difference between the noise of knocking 'big end' or 'little end' of bearings and the clatter of valves or the squeak of piston rings." If you are equipped with false teeth the experiment is "off."

The Right Way to Clean Chains.

When cleaning chains, soak them in kerosene, then dry and immerse in hot tallow. If considerably stretched, the chain should be renewed. It is useless to remedy a badly stretched chain by the radius rods. The radius rod will do up to the extent of one link, but after that the difference in pitch between the chain and sprocket becomes too great for proper running.

When Renewing the Clutch Leather.

In renewing the leather on your clutch use care in removing the rivets so that the old leather may be intact after removal. It will then be useful to mark out the new one by. In the new leather countersink the holes for rivet heads and put it on with the rough side out. It is well to soak it in castor oil, as that aids greatly in adapting the shape to the female part of the clutch.

In connection with their Philadelphia branch, Thomas B. Jeffery & Co. have established a warehouse at Nos. 1,249-51 North Twenty-seventh street.

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RADICAL DEPARTURES.

(Continued from page 181)

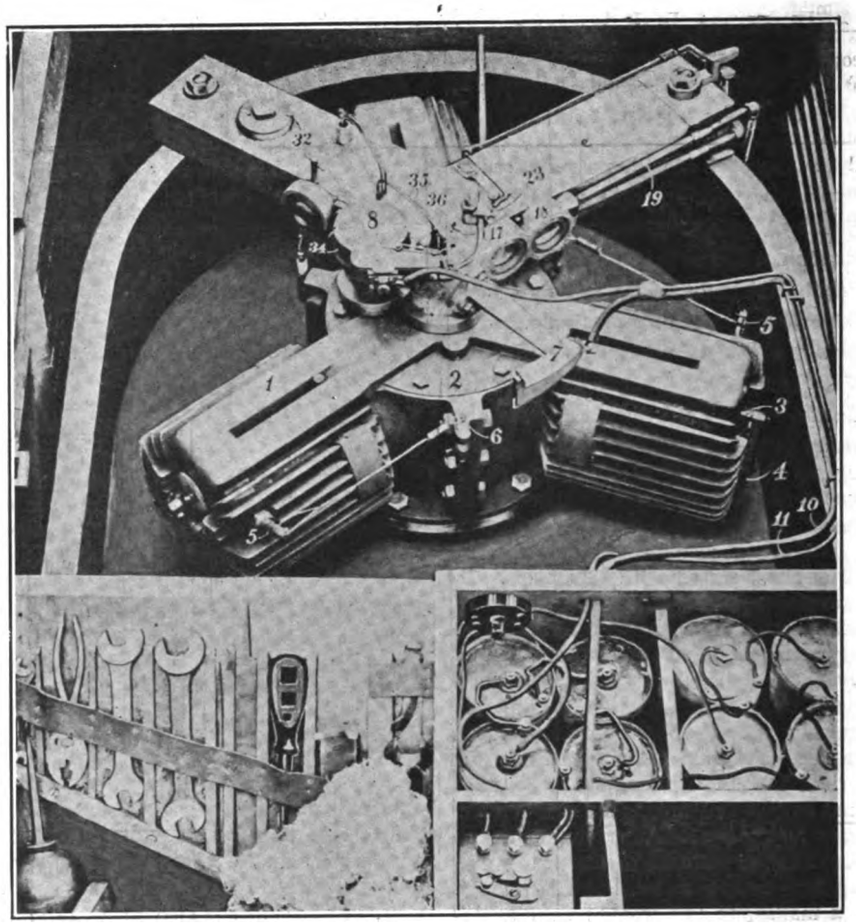
will be locked. In this position the car will be securely held on a hill or elsewhere. As soon as the clutch lever is moved to engage either the backing or low forward gear the brake is automatically released. This is of importance, for without this automatic release one may forget to release the brake before engaging the clutch.

The steering gear is claimed to combine the quick action of lever steering and the safety of wheel steering. A cam movement is interposed between the steering knuckle and the hand lever that is practically irreversible and relieves the hand entirely of shocks caused by the wheels striking an obstruction. It is possible to cross car tracks "on the bias," to run over brick, stones or dogs with no tendency to divert the car from its course. The control column from which the steering lever is hinged forms a rigid hold for the left hand, giving the operator great leverage, and at the same time the left hand is in position to instantly release the clutch or change gear, while with the right hand a quick turn may be made. A quick turn and a stop alone will often avoid a collision. The controlling levers and pedals do not in the least interfere with entrance or exit from either door or side, and the occupant of either seat may step directly from the car to the sidewalk without climbing over levers or pedals.

The Adams-Farwell revolving cylinder, air cooled, gasolene motor is claimed to have distinctive advantages because of its compactness, its perfect balance, light weight, wide range of speeds and power and practical air cooling under all conditions.

It reverses the ordinary practice, in that the engine cylinders revolve and the crank shaft is stationary instead of the crank shaft revolving and the cylinders being stationary. It is not what is usually termed a rotary engine. Three units, each being a complete cylinder, with cylinder head and one-third of a central crank case cast in one piece, are bolted together and bolted to a top and bottom cast steel flange, which has bronze bushings, forming bearings around the vertical stationary crank shaft. This forms the revolving unit, and is, of course, balanced perfectly. This revolving unit in a twenty-horse power engine, with 5 inch bore and 4½ inch stroke, weighs 190 pounds, and forms the flywheel.

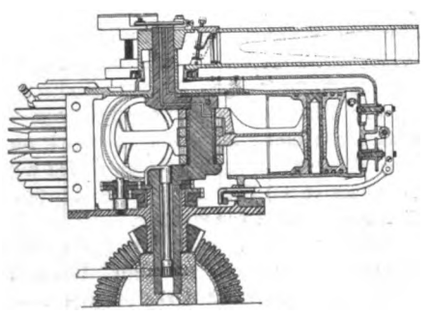
In each cylinder is a cast piston having four rings. The three pistons are connected to a single crank wrist pin of very large proportions by bronze pitmans. The pitmans, with the pistons at their outer end, swing around the stationary wrist pin in practically perfect mechanical balance. The wrist pin being eccentric with the axis of the revolving cylinder unit the pistons are caused to reciprocate back and forth in the cylinder at each revolution of the revolving unit, although the speed of the mass of the pistons does not change or stop and return at each dead centre as with the ordinary engine. It



THE ADAMS-FARWELL MOTOR.

is, therefore, susceptible to a very perfect mechanical balance. The action of the exploding charge is practically the same in this engine as in the ordinary kind, except for the smooth running caused by the variable compression control.

All engines exert a force or torque in two directions during the explosive or power stroke. A force or torque tends to turn over the crank and with it the flywheel in one direction, and an equal force or torque tends to turn the engine, cylinders, casings, etc., in the opposite direction. The ordinary engine has the cylinders and case secured to a foundation, and they cannot turn, but the crank shaft is free to turn. The Adams-Farwell has the crank shaft secured so it cannot turn, but the cylinders are free to turn. The ordinary engines transmit their power from the crank shaft; the Adams-Farwell transmits power by bevel gear from the revolving crank case. This is the difference technically, but the builders claim distinctive advantages for this motor, where lack of vibration, light weight, simplicity, practical air cooling under all conditions, wide range of speed and accessibility to all parts are desiderata.



SECTION OF MOTOR.

A single central crank case answers for the three cylinders. A single throw crank of about one-third the weight of the three throw crank found in the other type of engines is employed. A single valve operating cam opens both inlet and exhaust valves. As the entire engine revolves except the crank shaft and base, the engine is its own flywheel, and, being heavy, 190 pounds, is conducive to very steady running.

No muffler is employed. Because of the velocity of the cylinders passing through the air a muffler of the ordinary type may be entirely dispensed with. Auxiliary exhaust ports, which let out the high terminal pressure against the rapidly receding volume of air, are used. The discharge acts upon the air like a skyrocket, and not like a gun. It is asserted that there is less noise with this system than with the ordinary engine, when both are working at full power, and that the exhaust cannot be heard when the engine is working at part power; there is claimed to be absolutely no back pressure; the auxiliary exhaust ports reduce the pressure to that of the atmosphere before the exhaust valve in the head of the cylinder is open. The gases that pass out of the exhaust valve are there-

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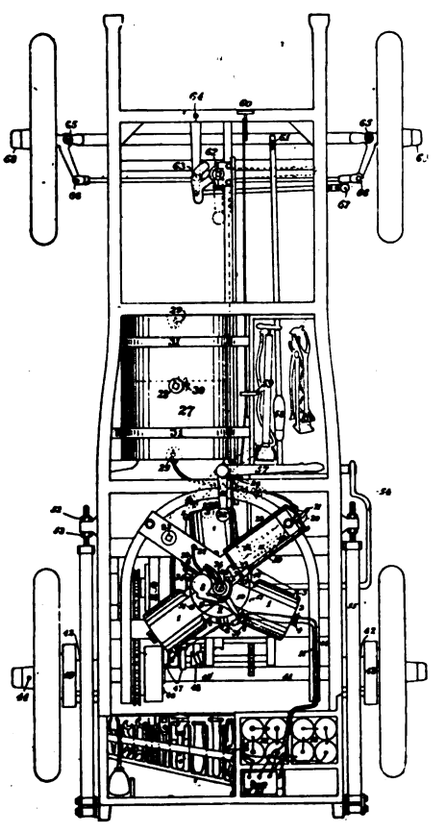
fore comparatively cool. The annoyance of pitted and warped exhaust valves is entirely overcome. The duty required of the valve operating levers, cams and gears is very light, as there is no terminal pressure in the cylinders when the valve is open. The valves are closed by centrifugal force; this force is in proportion to the requirements. The higher the speed of the engine the greater the force, and the greater the need of a stiff spring or force to close the valve. The springs used are made of light piano wire, and are useful only to close the valves in starting the engine, where the centrifugal force at the slow starting speed might not be sufficient to overcome the resistance of cold lubricating oil on the valve stems. After the engine is slightly warmed every spring might be removed, and the engine could be started and run as perfectly as with the springs.

Air cooling is effectually accomplished by the cylinders revolving at a rapid rate, drawing in air at the centre and expelling it with great rapidity at the periphery or ends of the cylinder. The cylinders are provided with longitudinal ribs cast integral with the cylinders, which provide a large radiating surface. Every particle of air that is in contact with any part of the engine one instant is thrown off with great velocity by centrifugal force, and must be replaced with air drawn in at the centre.

The speed of the motor is controlled entirely by their variable compression system, which consists of allowing that part of the charge not needed to give the motor the required power to escape back by the inlet valve, which is mechanically held open for a part of a compression stroke, that part of the charge so escaping being drawn in by another cylinder. There is no waste of gases. When the maximum power is required the inlet valve is closed at the end of the suction stroke and the full charge is compressed to about ninety-five pounds per square inch. When minimum power is wanted the inlet valve is not closed until the completion of the compression stroke; an exceedingly small part of the charge is retained and ignited by atmospheric pressure, giving a gentle expansion. A range of power and speed anywhere from maximum to minimum or vice versa can be had instantly or gradually as desired. It is possible when the vehicle is on the high gear to follow a walking horse or to spurt up to a forty mile clip without manipulating any brake, clutch, spark or carburetter levers. Variable compression is the entire source of control. This system of control is claimed to be very economical, to be conducive to very smooth running, to obviate the necessity of heavy exhaust valve springs, to run much cooler and to keep the cylinder heads and spark plugs entirely free from sooty deposits.

The carburetter is entirely automatic at all speeds, no attention being required after once adjusting. Gasolene is pumped through the upper pipe 19 into the constant level reservoir 18, which is a small cavity covered with a watch crystal, enabling the gasolene to be seen, and water, if any, detected. The surplus gasolene flows back into the pump well 20 through the lower tube.

An opening connecting the reservoir with the valve 23 is regulated by a needle valve, the hand of which is at 26. The air, after passing through the linen bag 24, which prevents dust entering, raises the little swing valve and at the same time the gasolene valve 23, forming a vapor which enters the central chamber, and thence out through the channel at the top of the cylinder and through the inlet valve 3. The sectional view will show this clearly. The proportion of air and gasolene is always the same, and the quality of the mixture is constant, but the quan-



tity varies according to the power required and the position of the variable compression cam. The mixing valves are opened only after the sucking cylinder has drawn in that part of the charge which the compressing cylinder is blowing back by its inlet valve.

The spark is regulated automatically by their automatic spark regulator, which fires the charge at all speeds at a point to produce the greatest efficiency. This is a device employing a centrifugal governor, which not only advances the spark when the speed of the engine increases, but also increases the length of the contact of the primary circuit. A contact of the primary circuit for one-thirty-sixth of a revolution of the engine gives sufficient time for the spark coil to become saturated and give a good spark when the engine is running 150 revolutions or less. This contact is automatically increased to about one-twelfth of a revolution of the engine when running at 900 revolutions per minute. This is claimed to be a great saving of battery current and contact breaker points, for without this variable contact it is necessary to make the contact of the primary circuit long enough for the highest speed, therefore using two or three times as much current when the engine is running slowly.

There is but one spark coil. The highest tension current is wire 10 connected to the commutator 7, which is an insulated segment with a brass strip on the lower edge. On each cylinder there is a wire which leads from an insulator 6 to the spark plug 5. On the top of insulator 6 is an adjustable brass cap, which is adjusted to pass under the commutator strip 7 without quite touching. In operation, as the cylinder that is at the time compressing approaches the position straight back (which is the dead centre position), the insulator 6 is passing under the commutator and the contact breaker breaks the primary circuit and a spark jumps the gap between the commutator 7 and porcelain 6, and thence to the spark plug and into the cylinder.

When the motor is started the spark is late and jumps the gap at the extreme right hand end of the commutator; a back kick is impossible. As the speed of the engine increases the automatic spark regulator advances the spark and it jumps further and further toward the left end of the commutator. The exact position of the spark can be seen while the motor is in motion.

The oiling of all parts of the motor proper is cared for by an automatic, positive feed oil pump. It consists of a circular barrel in which are four cam actuated plungers. The barrel is positively driven by a worm gear; there are no ratchets, springs or valves; it will positively deliver one drop of oil to each of four tubes every one hundred revolutions of the engine. Two of these tubes lead to a distributing channel in the upper end of the crank shaft and oil the top of each cylinder; one tube leads to the upper end of the wrist pin, and from thence to the lower crank shaft bearing; a surplus accumulating in the crank case lubricates the valve operating cams and gears. An opening on each side of each cylinder admits oil from the crank case to the cylinder, thus oiling each cylinder and piston at three equa-distant points. The fourth tube is an extra, and is usually turned to deliver its oil back into the tank. The oil tank is located in the left end of the angular aluminum casting, which forms a support to the upper end of the crank shaft. Being very close to the engine, it is kept warm in the winter time, and the tubes leading from the pump are very short and not liable to be broken.

Easy accessibility to all parts of the motor, transmission and running gear mechanism is claimed for this car. The entire motor mechanism is under and back of the rear seat. The gasolene tank and a convenient receptacle for carrying tire pump, extra inner tubes, jack, etc., are under the floor between the seats. The large space under the front seat (some five cubic feet) will be found con-

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venient for storing away touring baggage, picnic baskets, etc.

In the view of the chassis, all of the parts shown are accessible, and without removing the body. A small trapdoor under the front seat gives access to the forward steering gear mechanism; the floor between the seats is easily removable, as is also the rear seat. For ordinary attention and adjustment, however, the raising of the sloping top of the body is all that is necessary. From this position you will find exposed to view and readily accessible every part of the motor proper that will ordinarily ever require examination or adjustment; also every necessary tool required in these adjustment', each in a separate pocket, so that a glance will inform you if all necessary tools are aboard. Two sets of batteries, a spark coil and a double throw switch, which will enable either set of batteries to be used separately or both together after they have become too far exhausted to run the engine separately; you will find every inch of electrical wire exposed to view, and a loose connection can at once be located. A few extras, such as spark plugs, valves, bolts, nuts, springs, etc., an extra supply of lubricating oil, an oil can, some waste and a pair of asbestos tanned gloves will find room here.

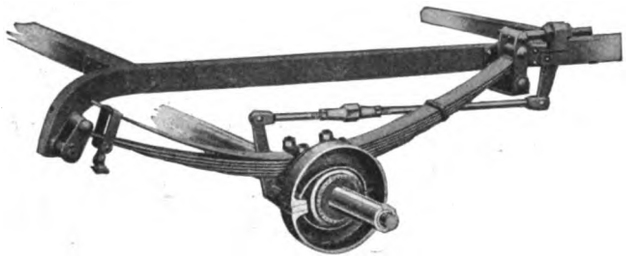
With no compression, the cylinders may be easily turned around, bringing any one in convenient position for removing spark plug or valves. All valves are duplicate. A cage forming the valve seat and guide for the vale stem is screwed into the head of the cylinders. Should a valve leak it can be replaced by another in a few minutes on the road and the grinding in process done at your leisure.

There is not a gasket or packed joint about the entire engine. The cylinder heads and one-third of the central crank case are cast integral with the cylinders. There is no hose or rubber tubing whatever about the car. The brass gasolene pipe, some four feet in all, is the only pipe about the engine.

By taking out the three bolts on each side, the two on the top and the two in the bottom flange, any cylinder may be drawn off for examination of piston, pitman or interior of crank case without disturbing any other part of the engine. By removing the two cap boxes on the transmission shaft the entire mechanism can be removed.

The base of the motor, to which the crank shaft is keyed, is a spider shaped bronze casting which, although light, has great strength and stiffness. This casting is secured to the chassis of the car by five studs. Every part of the motor and transmission is secured to this bronze casting, forming an integal, rigid power unit that may be removed and operated independent of any other part of the car.

The complete power plant, including all parts of the motor, transmission, oil tank and pump, carburetter, clutch operating cams, etc., all secured to the bronze supporting spider forming an integral power unit, weighs 387 pounds. Of this 157 pounds are the parts of the transmission which would not be needed if the motor was used for other purposes than that of automobile propulsion.



ADAMS-FARWELL VARIABLE SPRING.

Of the 230 pounds, the weight of the motor proper, 190 pounds in the cylinders, etc., forming the revolving unit or flywheel. All motor and transmission bearings are bronze with steel shafts, and the bearings are renewable.

The gasolene tank is made of heavy copper riveted and soldered. It has a partition in the centre with a stop cock communicating. With stop cock open both halves of the tank will be filled; if then shut off, warning will be given when half of the gasolene has been used that there is just enough gasolene left to get home on. A union stop cock is in either end; the tank is slung under the centre of the car by two heavy straps, and may be easily reversed should an accident cause one end to leak, or it may be removed if it it desired to store the car in a building where gasolene would not be allowed; it obviates the necessity of looking for clean cans in which to draw off gasolene.

Attention is called to the secure manner of fastening the body to the chassis. Six ½-inch Sweedes iron bolts being used, passing through metal bushed holes in the body so as to avoid shaking loose.

The under part of the car is entirely free of delicate mechanism which would be injured by running over brush, weeds, etc. The clearance under the centre of the car is 14 inches; the differential and chain, being on one side, comes over the path made by horses, and is 11½ inches from the ground.

All the novel features, such as revolving the cylinders around a vertical, stationary crank shaft, system of muffling, variable compression control, automatic spark regulator, control from front and rear seat, variable strength springs, carburetter, oiling system, etc., are the subjects of patents granted and pending in this and foreign countries.

The Adams Co. have one of the finest machine shops in the West, and are well positioned to make the most of their opportunities.

How Reputation Helps Sales.

That a reputation for reliability and probity has a distinct monetary value was demonstrated this week at the new Haynes-Apperson branch, on Broadway, this city. As related to a Motor World man by Manager Carrie, the story was this:

"We are only just beginning to be settled in our new quarters and to feel at home," he said. "There has been no time to seek business, so it is coming to us unsought. This morning a gentleman who was an entire stranger to us came in and asked some questions about Haynes cars. I showed him a tonneau that was on the floor, having just been uncrated. As he seemed to be interested, I suggested that we give him a demonstration. 'Oh, I guess it isn't necessary,' he replied. 'I have heard about Haynes cars and I imagine they are all right. Could you have this car ready to send out to me this afternoon?'

"That was pretty quick work, but I answered that we could. 'Very well, then,' he said. 'I'll write you a check if you will give me pen and ink,' and, leading the way to the office, he had the check for $2,550 ready before I could make out the bill.

"'Send it to me at Bernardsville, N. J., he said. 'I am Senator Childs, and I want to use it right off for electioneering purposes.'

"So we have been at work on it and it is now about ready," concluded Mr. Carrie.

Increasing the Locomobile Facilities.

In order to facilitate the construction of their high grade cars, the Locomobile Co. of America have recently installed a considerable quantity of special machinery. Important changes have been made in the drop forging department, new and improved tools having been added in order to take care of the increasing output. A few forgings of special character, requiring very large and heavy machinery, are made outside of the Locomobile factory. In these few cases, however, the parts are made from special material furnished by the Locomobile company in order that the work may be up to their usual high standard.

A number of new gear cutting machines have been added, doubling the capacity of work in this department. Some of the new machines make it possible to cut and plane absolutely theoretically corect bevel gears which run at high speed without noise. A quantity of automatic screw machines have been added, together with special machinery for boring cylinders and grinding valve seats.

The work on the 1905 models is progressing rapidly, and it is expected that the Locomobile output will be on the market three months sooner than it was last year.

When the Burner Clogs.

One of the petty annoyances that are sometimes encountered is that of a clogged burner in the acetylene headlight. The easiest way out of the difficulty is to carry a spare burner or two. Burners are inexpensive, and are easily removed or inserted.

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MATERIAL FOR BEARINGS

Composition not the Chief Item of Importance—The Other Things That Count.

The importance of the material used in the various bearings of the automobile is attracting attention, but not the right kind of attention.

Too many manufacturers and users are depending entirely upon the chemical composition of the brass or bronze, or whatever it may be in the way of an alloy.

In order that a metal may be just right, it is quite true that the composition must be just right. More important than the composition, however, is the manner of melting and casting. There are many details in connection with this that affect the life of a brass or bronze vitally.

If the melter be careless and melt his materials in such a way that the air can get at it, or if he adds dirty materials that are full of oxides to start with, he cannot get a good sound casting; if the casting is not sound it will not wear well.

This is not as important, however, as another feature, which is that castings must be cooled in such a manner as to produce a fine, close grain. This must be cooled so quickly in one way or another that no one of the elements of an alloy may have time to separate, which it will do if the casting is the least bit slow in cooling. Further than this, the more slowly the casting cools, the larger will be the crystals. The larger the crystals, the less strength the metal will have. Strength means wearing quality, resistance to the pound of the explosion of the engine. Strength means a long lived bearing.

Therefore, in addition to specifying a certain composition when ordering, it is necessary to deal with good, reliable houses that understand the melting of alloys to the last detail—men who not only mix proportions carefully, but cast carefully.

On the other hand, many crank pin brasses and connecting rod brasses are blamed for failure not due in any way to the quality of the bearing. Some engines pound badly, and at the slightest provocation. In the hands of an ignorant or careless driver they pound more or less all the time. No connecting rod brass will stand this sort of punishment, even with extremely generous proportions, a small pressure per square inch, and all that.

The force of explosions in a gas engine cylinder is not greatly different from that of a gun, and it is easy to believe that brass can be battered by continually exploding a charge against it, in just the same way that the charge is exploded against the connecting rod and crank pin.

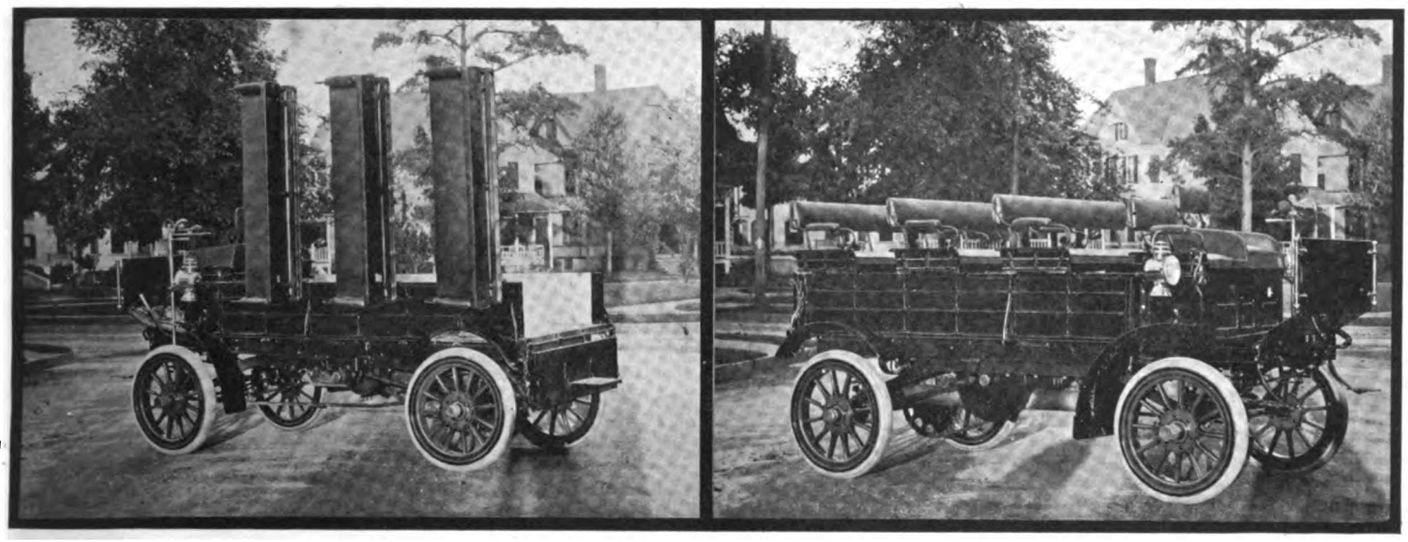
In short, there are some machines in which no kind of brass or bronze will wear well.

CAPACITY OF SPRINGS

Uncertainty That Often Exists—Importance of Calculating Loads Each Spring Must Carry.

Complaints as to the supposed carrying capacity of springs are frequent. Without doubt, their deficiencies can easily be traced. In many cases the grade of steel is not what it ought to be, and the supposed carrying capacity is not in the springs. Those experienced in the suspension of carriages and wagons generally agree that the straighter the spring the easier it works. But springs are cambered or are "open," so that the greatest possible load or down pressure shall not deflect the plates beyond the horizontal line. Hence the camber or opening must always be greater than the greatest deflection for the load they are intended to carry. There are three ways of increasing the flexibility of springs—by increasing the length, by decreasing the opening and by reducing the width and thickness of plates. These facts are well known to every carriage and wagon builder, but there seems to be a great deal of uncertainty as to the correct results arising from either change. Experience alone has taught those connected with this part of carriage and wagon building what the dimensions should be for a certain load. If conditions vary by changing the load from either of the front or back wheels, or by increase of weight in either direction, mistakes relative to its carrying capacity are likely to result, says the Carriage Monthly.

Take, for instance, springs on a brougham or cabriolet. Examine both of these carriages and the position of seats, and you will find that the weight is evenly divided between front and rear seat, or, in other words, the centre of gravity is between the two seats. Now take a coach or a landau,



THE KNOX COMBINED COMMERCIAL VEHICLE AND SIGHT-SEEING CAR.

Concerning Knox's Combination Car.

To their extending line of commercial vehicles the Knox Automobile Co., Springfield, Mass., have added the combination business and pleasure car shown by the accompanying illustrations. The first of the vehicles was delivered to the Anheuser-Busch Brewing Co., St. Louis. It has a capacity of 2,500 pounds, or 14 passengers; has a wheel base of 96 inches and tread of 56 inches; 3½ inch solid tires are used on 32 inch wheels. The motor dimensions are 5 by 7 inches. The car has a maximum speed of 18 miles per hour. The St. Louis brewers are using it for service in meeting rush orders and in taking sight-seeing visitors to Mr. Busch's farm, the removable seats admirably adapting it to both purposes.

The Non-Pinchable Inner Tube.

In order to do away with pinching the inner tube an English rubber company has designed a tire in which the air chamber is vulcanized in an inverted U shape. It is made larger than the outer cover, and when inflated is under compression; therefore the walls are not thinned by stretching.

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where the greatest weight is on front springs and front wheels. Again, examine the regular six-passenger 'bus, where one-third of the weight is on the front springs and wheels and two-thirds on the rear springs. Here is the difficulty for those who never have built such a 'bus. In the first place, they must calculate the difference in weight between front and back springs, and then order the springs for the intended weight each spring has to carry.

The main plates on all springs should always be of a heavier grade of steel, being backed by lighter or reduced grades. This strengthens the carrying capacity, improves elasticity and prevents to a greater extent the matter of fractures from collapse or recoil.

And Now the "Automobile Match."

The automobile has been the cause of a good many novelties in the matter of modified everyday objects, and the last, but not least, to undergo this metamorphosis is the household match! Realizing the difficulties attending the use of ordinary matches in a high wind, and the frequent absolute necessity for obtaining a light under such inclement conditions when motoring, a celebrated English firm of match makers have brought out a suitable and reliable form of match for use in such circumstances. These new matches are nearly five inches long from end to end, and have no less than one and one-half inches of inflammable matter at their business ends. Being of the "safety" variety, they "will only strike on the box," and a square of the igniting paper is stuck on one end of the matchbox for this purpose.

The flame given by one of these matches lasts for nearly half a minute, and will keep alight in strong winds. As the heads are securely attached to the stems, they do not easily fall off, but the stems themselves are not fired by the flame and are made long only for convenience in handling.

G & J Tires Win Every Event

at the Los Angeles Race Meet, Oct. 22,

SEVEN FIRSTS, SIX SECONDS,

and Make New World's Records.

Frank A. Garbut, in 20 H.P. Stewart—Garbut Racer—One Mile Amateur Record, 58 2-5 Sec.

Geo. Miller, in 24 H.P. Pope-Toledo, One Mile for Stripped Stock Cars, American Make, 1.00 3-5 Sec.

THE SPEED OF THE G & J THREAD FABRIC TIRE IS PHENOMENAL. IT IS AS DURABLE AS IT IS FAST.

G & J TIRE CO. Main Office and Factory: **Indianapolis, Ind.**

ANNUAL AUTOMOBILE AUCTION

— OF —

New and Second-Hand Automobiles,

November 10th, 1904.

GASOLENE, STEAM and ELECTRIC RUNABOUTS, TOURING CARS and TRUCKS.

The greatest opportunity ever presented of bringing together the buyer and seller.
If you are in the market to buy, write for preliminary catalogue, issued October 26.
If you want to sell, write for information blank governing entry of machines.

W. D. GRAND, American Horse Exchange, 50th Street and Broadway, NEW YORK.

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VEEDER ODOMETERS

are supplied as part of the regular equipment on the

KNOX
STEVENS-DURYEA
PIERCE
OLDSMOBILE
APPERSON BROS
NATIONAL
BAKER
BUFFALO ELECTRIC
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"It's Nice to Know How Far you Go."

THE VEEDER MFG. CO., - Hartford, Conn.

Makers of Cyclometers, Odometers, Techometers, Counters and Fine Castings.

Railway Exchange, Chicago, Oct. 4, 1904.

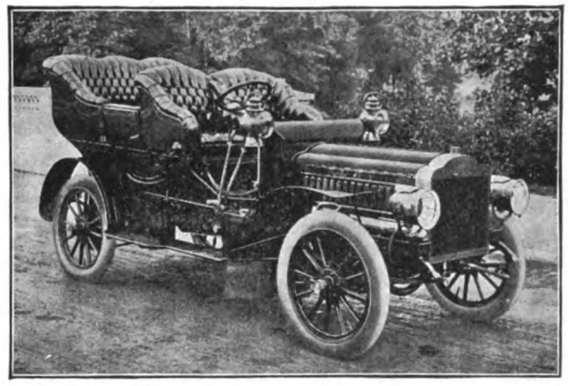
"My four-cylinder *Locomobile* Gasolene Touring Car is entirely satisfactory. Received it May 19th, 1904, and today the Odometer indicates that it has run 7,260 miles. Except tires, we have had no trouble with the machine—it has not even been in the shop for repairs—think it is now running smoother than ever.

"I take great pleasure in recommending the *Locomobile* to my friends."

Yours truly, JOY MORTON

The *Locomobile* Company of America,
BRIDGEPORT, CONN.
BRANCHES: New York, Broadway and 76th St.; Philadelphia, 249 North Broad St; Chicago, 1354 Michigan Ave.; Boston, 15 Berkeley St.
Member Association of Licensed Automobile Manufacturers.

The THOMAS FLYER Touring Car.



For beautiful and original (Side Entrance) body lines;
For great power, 40 H. P., 4 cylinders; simplicity of mechanism;
For reserve strength, large bearings;
For sweet and quiet running;
For its many unique conveniences, and
For value in dollars.

Agents desiring to join the Thomas "Flyer" Success Club should do so at once as it is now evident that all of the 1905 output will be sold before January 1st.

SEND FOR CATALOGUE. CALL FOR DEMONSTRATION.

C. A. COEY & CO., Chicago. WESTERN MOTOR CAR CO., Los Angeles.
C. S. HENSHAW, Boston. J. J. BARCLAY, Minneapolis, Minn.
H. S. HAUPT, 48th & B'way, N.Y. L. G. MARTIN, Pittsburg, Pa.

The Manufacturers,
E. R. Thomas Motor Co., 1210 Niagara St., Buffalo, N. Y., U. S. A.

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MR. MANUFACTURER

We want to make your

RADIATORS

You won't regret it if we do.

THE DIAMOND STAMPED WARE CO.

DETROIT, MICH.

Also Hoods,
Copper and Brass Stampings,
Bent Tubing,
Copper Water Jackets.

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The Week's Patents.

772,419. Controlling Mechanism for Flash Boiler Systems. Hermann Lemp, Lynn, Mass., assignor, by mesne assignments, to General Electric Company, a Corporation of New York. Filed Oct. 2, 1902. Serial No. 125,668. (No model.)

Claim.—1. In combination, a boiler, a motor, a pump, and a single controlling device which regulates the motor and also the effective delivery of the pump together at certain times and only the pump at other times.

772,463. Motor Vehicle. William F. Kramer, Dayton, Ohio. Filed March 23, 1904. Serial No. 199,538. (No model.)

Claim.—1. In a motor vehicle, a running gear frame, a solid steering axle, a steering handle, means connected with said axle for turning the axle in either direction from the steering handle, and connections between the steering axle and the running gear frame permitting said axle to turn and permitting said axle and the running gear frame to rise or fall in passing over obstructions or depressions.

772,530. Carburetter for Gasolene Engines. Joseph A. McGee, Big Spring, Ind. Filed June 6, 1904. Serial No. 211,352. (No model.)

Claim.—1. In a device for the purposes specified, a rotating drum with perforated walls, an air conduit discharging into said drum and a nozzle discharging gas into the drum.

772,571. Electric Motor Vehicle. Hiram P. Maxim, Harry M. Pope and Herbert W. Alden, Hartford, Conn., assignors, by mesne assignments, to Morton Trust Company, trustee, a Corporation of New York. Filed Sept. 24, 1897. Serial No. 652,858. (No model.)

Claim.—1. In a motor vehicle, the combination with a battery, a motor and controller and electrical connections intermediate of the battery and motor and a handle for operating the controller, of a main line conductor for transmitting electrical energy from the battery to the controller, and a cut out, independent of the controller, comprising a bodily movable member constituting a current carrying portion of the circuit and readily removable to prevent transmission of energy between the battery and the controller.

772,590. Induction Coil. Richard Varley, Providence, R. I., assignor to Varley Duplex Magnet Company, a Corporation of New Jersey. Filed July 12, 1904. Serial No. 216,254. (No model.)

Claim.—1. The combination with the casing and vibrator of an induction coil, of a flexible cover fitting upon said casing and completely inclosing said vibrator.

2. The combination with the casing and vibrator of an induction coil and the adjusting screws for said vibrator, of a flexible elastic hood fitting upon said casing and completely inclosing said vibrator and screws.

772,591. Induction Coil. Richard Varley, Providence, R. I., assignor to Varley Duplex Magnet Company, a Corporation of New Jersey. Filed July 12, 1904. Serial No. 216,255. (No model.)

Claim.—1. The combination of a box or housing, an induction coil adapted to fit therein a group of contact plugs on one of said parts and a similar group of hollow contacts or terminals on the other of said parts, the hollow contacts being arranged to receive all of said plugs at the same time, as and for the purpose set forth.

772,592. Induction Coil. Richard Varley, Providence, R. I., assignor to Varley Duplex Magnet Company, a Corporation of New Jersey. Filed July 18, 1904. Serial No. 216,932. (No model.)

Claim.—1. In an induction coil, the combination of vibratile circuit controller, means for creating a pressure of the contacts thereof and means for relieving said pressure during the periods of energization of the coil.

772,625. Speed Indicating Apparatus. Fritz Montandon, La Chaux-de-Fonds, Switzerland. Filed Aug. 18, 1902. Serial No. 120,088. (No model.)

Claim.—1. A vehicle speed indicator comprising the combination of a part actuated relatively to the speed at which the vehicle is travelling, an indicating device associated therewith showing a definite distance traversed, and a stop watch or timepiece automatically set into operation and automatically arrested by the speed indicator actuating

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mechanism and having the usual indicating devices and which shows the time occupied in traversing such definite distance.

772,636. Vehicle Tire. James A. Swinehart, Akron, Ohio. Filed May 13, 1904. Serial No. 207,802. (No model.)

Claim.—1. A tire for wheels comprising an elastic body solid throughout with concave sides and narrowed central portion and a convex tread surface with an enlarged rib centrally about the circumference of the tread.

772,649. Sparking igniter. Ernst Eisemann Stuttgart, Germany. Filed April 12, 1902. Serial No. 102,613. (No model.)

Claim.—1. An igniter for explosive engines and the like, comprising a current producer of high self-induction, a contact disk running synchronously therewith and in a short circuit with the same, an induction coil of which the primary coil is connected with the current producer and in circuit with the contact disk, and means for periodically opening the short circuit between the current producer and the contact disk, and causing the entire current to flow through the primary coil, the secondary coil being connected with sparking points; substantially as described.

772,673. Carburetter. Alvah C. Roebuck and Frank McMillan, Chicago, Ill. Filed December 7, 1903. Serial No. 184,035. (No model.)

Claim.—1. In a carburetter of the type herein described, the combination of a carburetter casing, closure heads for the ends of the same, an inner shell dividing the carburetter casing into an inner sub-chamber and an outer annular sub-chamber, a porous filling in said annular sub-chamber, an inlet neck connected to the inner sub-chamber, and an outlet neck connected to the annular sub-chamber, substantially as set forth.

772,812. Metallic vehicle wheel. Thomas Midgley, Columbus, Ohio, assignor to the Midgley Manufacturing Company, Columbus, Ohio, a corporation of Ohio. Filed August 21, 1903. Renewed April 13, 1904. Serial No. 203,034. (No model.)

Claim.—1. A metallic vehicle wheel rim, a tubular metallic spoke, and a metallic thimble at the outer end of the spoke and metallically joined thereto and to the rim.

772,813. Metallic vehicle wheel. Thomas Midgley, Columbus, Ohio, assignor to the Midgley Manufacturing Company, Columbus, Ohio, a corporation of Ohio. Filed August 21, 1903. Renewed April 13, 1904. Serial No. 203,035. (No model.)

Claim.—1. A metallic wheel hub composed of opposite disks having inner right angled flanges forming the spoke chamber, and outer flanges, and opposite hub-sections engaged by said outer flanges, and an axle-box within said disks and hub-sections, the said parts being metalically joined together.

772,814. Metallic wheel spoke. Thomas Midgley, Columbus, Ohio, assignor to the Midgley Manufacturing Company, Columbus, Ohio, a corporation of Ohio. Filed August 24, 1903. Renewed April 13, 1904. Serial No. 203,036. (No model.)

Claim.—1. A tubular metallic wheel spoke having a wedge shaped head, flat on two of its sides, and one of the inclined sides provided with a transverse depression having a wall between said flat sides of the spoke and forming the bottom of the depression.

772,856. Sparking plug for combustion engines. Charles H. Wisner, Flint, Mich., assignor to Peter P. G. Hall., jr. Filed July 24, 1902. Serial No. 116,766. (No model.)

Claim.—1. A sparking plug for combustion engines, provided with an outwardly extending passage opening into the cylinder, a second passage larger than the first passage forming an outward extension of the same, a raised shoulder on the surface of said plug between the ends of said passages, said shoulder surrounding the inner end of the first mentioned passage at a distance therefrom, a disk made up of one or more sheets of mica resting upon said shoulder, means for holding the mica, and an electrode secured to said disk and extending along said passage.

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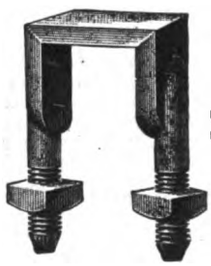
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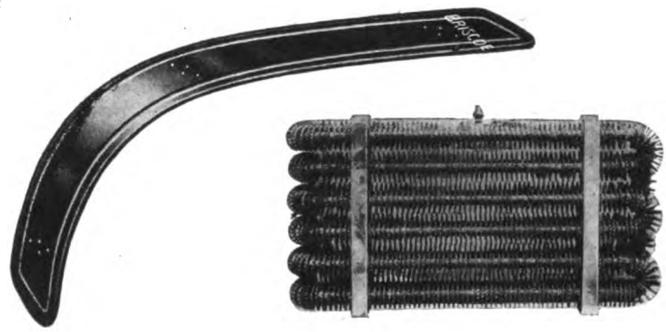
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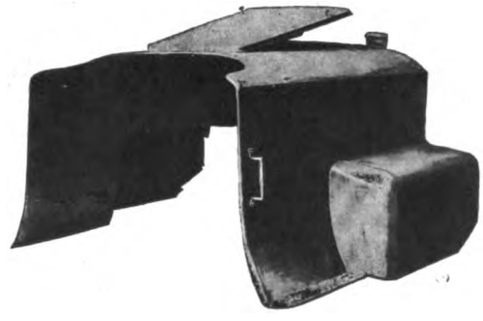
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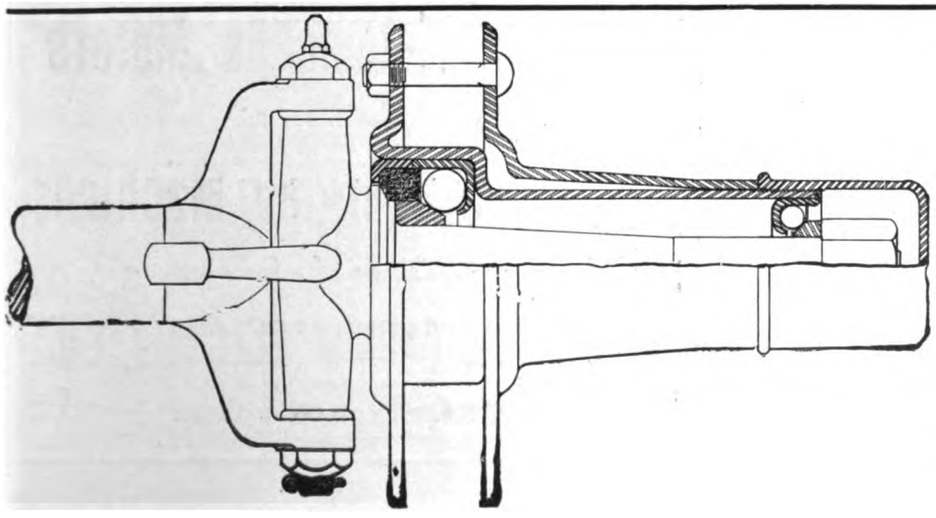
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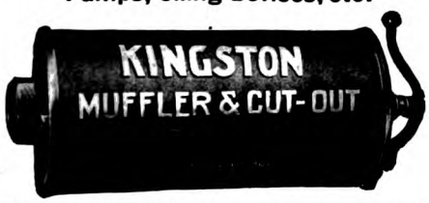
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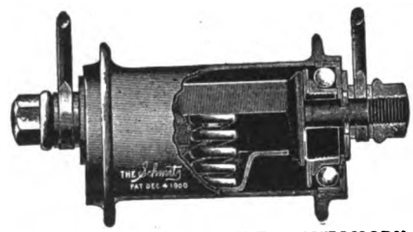
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The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 38 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is located in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

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Concerning Speed Changing

A great many motorists view speed changing with greater trepidation than any other operation connected with driving a car, and this often remains the case after they have become tolerably expert in its management. There is only one thing to do, and that is to work along as well as one is able, trying various methods of manipulation until the ones best suited to the driver are hit upon.

When one is able to handle the car well on the low gear, one may safely change into the next. Before changing gear the motor should be accelerated a little, the clutch withdrawn, and the gear lever moved to the second speed notch. Be careful, however, not to get past the notch. If there is a "latch" on the change speed lever, it will, of course, have to be first raised before the lever can be moved. It will facilitate changing gear to raise the latch and then move the lever until the latch clears the notch, when it may be released. The latch will then be in contact with the quadrant and ready to drop into the second speed notch when the lever reaches that position. The latch, by dropping into the notch, tells when the gears are in mesh. This method of changing is much easier than when one lifts the latch and holds it clear of the quadrant until the gears are thought to be meshed and then releases the latch, which may not find its notch until the lever is moved backwards and forwards one or more times.

In cars having the "gridiron" or Mercedes type of quadrant, care must be taken that the change gear lever is not moved into the wrong slot. In going "up," if a gear is skipped, say from first to third, it will not do so much damage as if a gear is skipped in changing from a high speed to a low, say, from fourth to second. In the latter case a great strain is imposed on the clutch and transmission, as the momentum of the car is utilized in turning the motor over at an extremely high speed, and may result in breaking a gear or twisting a shaft.

The beginner should practice changing gear until this can be accomplished without looking at the quadrant, as this takes his attention from the road in front. After a little practice he will be able to change gear as well in the dark as in daylight, "feeling" by the position of the lever the speed he is on.

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It is a practice with nearly all manufacturers of fine carriages to bolt the springs at both top and bottom. Bolting the springs has a neater appearance, but the method weakens the parts considerably where the bolts are put. Take, for instance, a 1¼-inch wide plate bolted with ¼-inch bolts. This spring near the bolt is equal in strength only to a 1-inch wide spring. For vehicles which are only occasionally and carefully used, bolts will do. When built with the very best material they will stand its use well, but this is different in the case of vehicles which are in constant use. They should be clipped, top and bottom.

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For 1905.



Experiments are Expensive.

Sometimes they are not only expensive, but fatal. This is especially true in motor car construction. It is, therefore, always on the side of safety and good judgment to adopt those parts which have stood the test of time and have acquired for themselves a reputation based upon actual merit Price is not always the most important consideration.

Therefore, in deciding what cooler you will use for 1905, select one with a reputation.

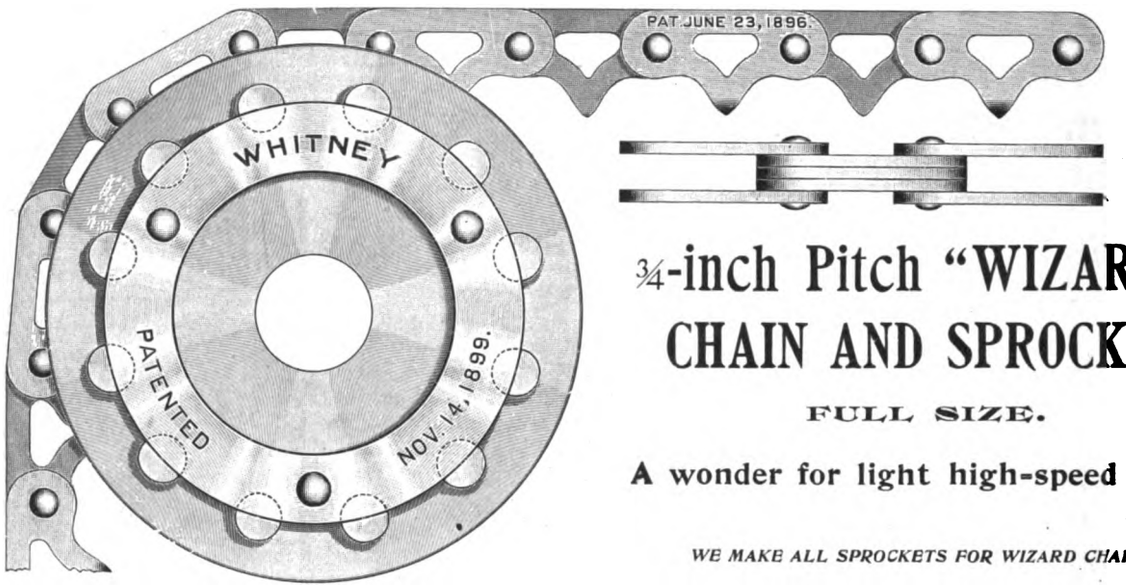
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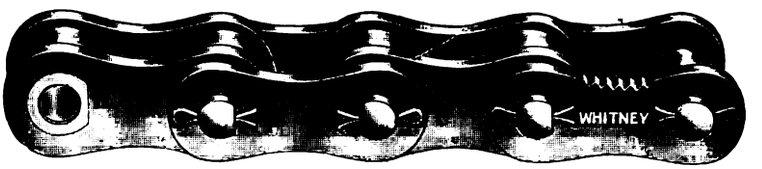
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FULL SIZE.

A wonder for light high-speed work.

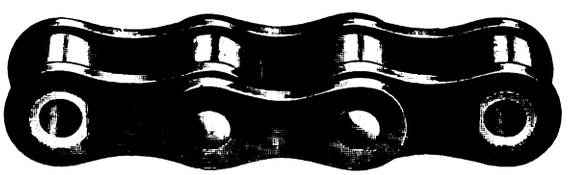
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NEW CONSTRUCTION.



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A detailed account of the achievements of the Oldsmobile would fill a volume.

These cars are equipped with the famous **Oldsmobile** 10 H. P. Motor, all machinery simple and readily accessible, no gaskets to cause trouble, hub brakes, comfortable and roomy tonneau, all the advanced progressive ideas and devices.

For pleasure, for service, for all round reliability—*the best thing on wheels.*

Oldsmobile Standard Runabout, $650
Oldsmobile Light Tonneau Car, $950

Send for book about Oldsmobiles.

All prices f. o. b. factory.

Address

OLDS MOTOR WORKS,
1332 Jefferson Ave.,
DETROIT, - U. S. A.

Member of the Association of Licensed Automobile Manufacturers.



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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

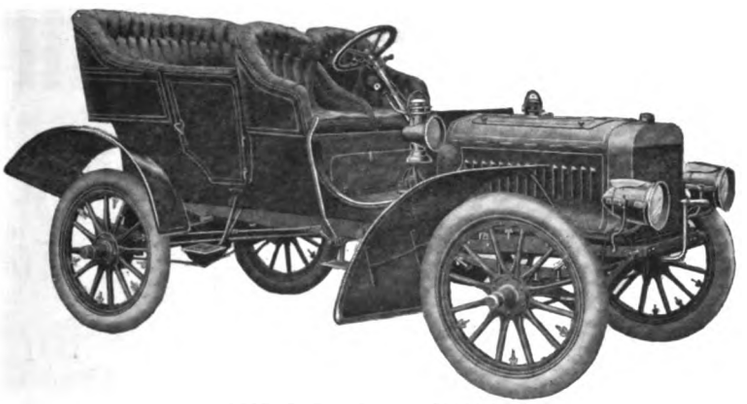
Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

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The FORD 1905 Cars

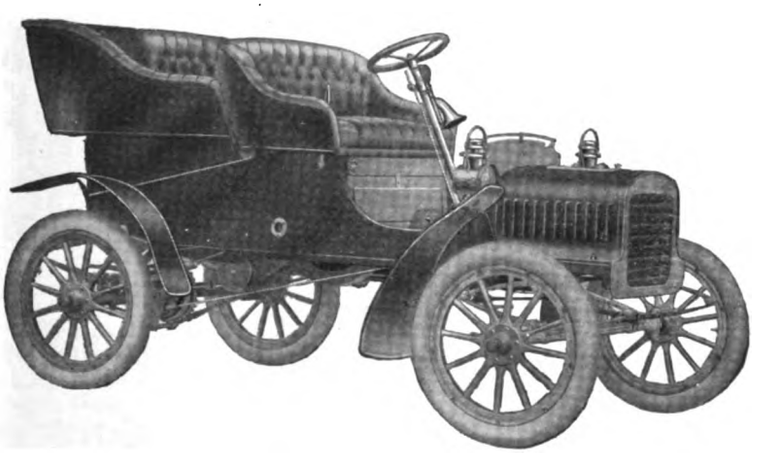


MODEL B. Price, $2000.00.

HENRY FORD'S LATEST AND GREATEST SUCCESS.

Our 1905 Touring Car weighs only 1710 lbs. The 4-cylinder vertical motor develops over 20 horse power, SO THAT THIS CAR HAS MORE POWER FOR ITS WEIGHT THAN ANY CAR IN THE WORLD. This means considerably less wear on the tires and consequently a great saving to the owner. It also means there is ample reserve power for steep grades and sandy roads.

Wheel base, 92 inches; direct drive, with universal coupling; cylinders, 4 x 5, water cooled; automatic oiling device with force feed; large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car place this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horse power, planetary transmission, chain drive, and increased gasoline capacity. The most stylish, low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. Write us To-day for Full Information.

THE FORD MOTOR COMPANY, - Detroit, Mich.

JOHN WANAMAKER, Selling Agent for New York and Philadelphia.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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IMPORTANT

OUR fourth season in the manufacture of high-grade gasolene touring cars. From the start we used four-cylinder front vertical motors, sliding gear transmissions, automatic carburettors and all-steel frames. We will continue to do so. LOCOMOBILE cars for 1905 will have many interesting features, and all models will have side entrance tonneaus. Our announcement of 1905 models will be advertised in this publication Nov. 17th.

The *Locomobile* Co. of America

BRIDGEPORT, CONN.

Less than One-Half of One Cent per Mile for Repairs.

Detroit, Mich., Sept. 2, 1904.

CADILLAC AUTOMOBILE CO.,
Detroit, Mich.

Gentlemen: On the 25th of April, 1903, I purchased through your sales agent, Wm. E. Metzger, Cadillac No. 183, which I think was one of the first machin s you manufactured. Since that time I have driven it something over 14,000 miles, and my repair bill in that time has been a little less than $60.00.

I want to thank you for the courteous way in which you have always treated me, and if your model D machine is as good as the Model A, you can consider my order placed now.

Very truly yours, (Signed) ARTHUR A. PALMER,
Adrian, Mich.

A good Operator can run a CADILLAC several seasons at small cost for repairs if he will take the proper care of his machine. The exclusive selling right for the CADILLAC line for 1905 may be open for your vicinity. Do you want it?

CADILLAC AUTOMOBILE COMPANY,

Member Association Licensed Automobile Manufacturers

Detroit, Mich.

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DAD SAYS THE FELLOW WHO TRIES MORGAN & WRIGHT CLINCHER TIRES AFTER HE'S TRIED OTHER KINDS ALWAYS WISHES TO GOODNESS HE'D TRIED THEM FIRST

W. G. LLOYD COMPANY,
Chicago.

MORGAN & WRIGHT,
Chicago.

Gentlemen: I want to give my experience as to the good qualities of your automobile tires. I believe you have all competitors beaten as to good service. Up to four weeks ago I had two kinds of tires on my Peerless, two———— and two ————, and I wanted to decide for myself which of these two would give the best service.

Four weeks ago I ordered from the Cadillac Automobile Company, in which I am interested, another ———— 34 x 3½. Mr. Howard Hoops suggested to me to try a Morgan & Wright, which I did. I can safely say that it is the best tire out, as I gave it a good test on a four-day trip to Milwaukee, Waukesha and Geneva. I also went down to South Bend to meet the Eastern delegation to St. Louis. In fact, the machine has been on the streets every day, and the Morgan & Wright tire looks just as good as the day I put it on, and it is the only one of the four I did not have any trouble with.

I have recommended same to a number of people of the club and others.

Yours very truly,
W. G. LLOYD.

MORGAN & WRIGHT,
CHICAGO.

New York Dayton Detroit
St. Louis San Francisco

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

PREMIER
AIR-COOLED

DIRECT RADIATION.

5,500 miles in a Premier air-cooled car during 1904 with a total of $23.00 repairs is the record of a well satisfied customer. "There is a reason for most things uncommon."

Expert drivers do not find much trouble in figuring out *why* Premier cars will do more mileage than other cars and at less cost for maintenance. Premier details are complete, Premier quality absolute, Premier methods of construction and operation *perfect.*

1905 Cars Now Ready for Delivery.

A few additional first class agents wanted in unoccupied territory.

Premier Motor Mfg. Co.
INDIANAPOLIS, IND.

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WINTON

For the 1905 selling season the house of WINTON announces

FOUR MODELS

All Motors Vertical

All Four Cylinder

Everything Highest Grade

Our new type four-cylinder vertical motor is a wonder—is pleasingly simple and practical, surprisingly efficient, and, in the matter of direct accessibility of every working part, has everything else driven to the tall timbers.

We present something so clever as to remove the cause of those annoying difficulties which have accompanied the four cylinder vertical motors that have gone on the market to date.

CLASSIFICATION

MODEL A (Special)	$4500
MODEL A	3500
MODEL B	2500
MODEL C	1800

All these models have side entrance tonneau, direct drive, and a positive magneto ignition which banishes accumulators, dry batteries and vibrator spark coils.

Our new system of lubrication has nothing to get out of order—no springs or valves—will always feed oil in proper quantity at the right place and at the right time.

Our new spring suspension insures greatest ease and comfort.

We can't tell the whole story in this limited space. Get in touch with our Sales Department at once.

If you are the representative Sales Agent in your territory, we want your assistance in marketing the very best, as well as the most popular, cars in America.

The Winton Motor Carriage Co.

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

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— THAT ETERNAL QUESTION —

— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

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In recognition of superior quality in workmanship and materials, together with correct engineering and design.

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THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

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POPE AUTOMOBILES

"YOU SEE THEM EVERYWHERE."

THE

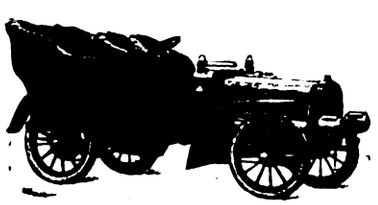
Highest Award

AT

St. Louis

again emphasizes
the superiority of the

Pope-Toledo Touring Car



The famous 24 H.P. POPE-TOLEDO
("The Quiet Mile-a-Minute Car.")

WINNER of THIRD PLACE in the
VANDERBILT CUP RACE.

Pope Motor Car Co.,
TOLEDO, OHIO.

Members Association of Licensed
Automobile Manufacturers.

Railway Exchange, Chicago, Oct. 4, 1904.

"My four-cylinder *Locomobile* Gasolene Touring Car is entirely satisfactory. Received it May 19th, 1904, and today the Odometer indicates that it has run 7,260 miles. Except tires, we have had no trouble with the machine—it has not even been in the shop for repairs—think it is now running smoother than ever.

"I take great pleasure in recommending the *Locomobile* to my friends."

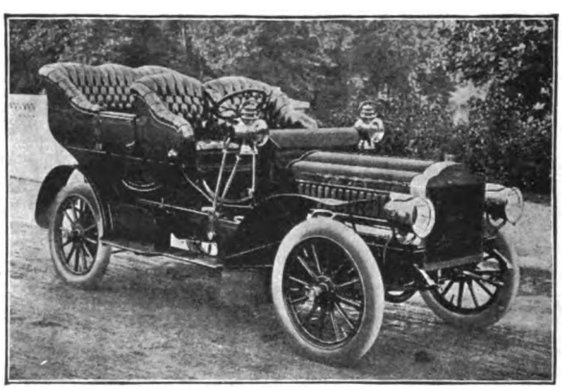
Yours truly, JOY MORTON

The *Locomobile* Company of America,
BRIDGEPORT, CONN.

BRANCHES: New York, Broadway and 76th St.; Philadelphia, 249 North Broad St; Chicago, 1354 Michigan Ave.; Boston, 15 Berkeley St.

Member Association of Licensed Automobile Manufacturers.

The THOMAS FLYER Touring Car.



For beautiful and original (Side Entrance) body lines;
For great power, 40 H. P., 4 cylinders; simplicity of mechanism;
For reserve strength, large bearings;
For sweet and quiet running;
For its many unique conveniences, and
For value in dollars.

Agents desiring to join the Thomas "Flyer" Success Club should do so at once as it is now evident that all of the 1905 output will be sold before January 1st.

SEND FOR CATALOGUE. CALL FOR DEMONSTRATION.

C. A. COEY & CO., Chicago. WESTERN MOTOR CAR CO., Los Angeles
C. S. HENSHAW, Boston. J. J. BARCLAY, Minneapolis, Minn.
H. S. HAUPT, 48th & B'way, N.Y. L. G. MARTIN, Pittsburg, Pa.

The Manufacturers,
E. R. Thomas Motor Co., 1210 Niagara St., Buffalo, N. Y., U. S. A.

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G & J Thread Fabric Tires In the Vanderbilt Race.

RECENT RECORDS ON G & J TIRES.

WORLD'S RECORDS
LIGHT WEIGHT CARS:
Ford,
Driven by Frank Kulick:
1 mile, 1:00 3-5
2 miles, 2:04
3 miles, 3:06 2-5
4 miles, 4:07 4-5
5 miles, 5:09 4-5

WORLD'S RECORD
MEDIUM WEIGHT CARS:
Premier Comet,
Driven by Carl Fisher:
2 miles, 1:59 3-5

WORLD'S RECORD
24 H. P. TOURING CAR,
AMERICAN MAKE, STRIPPED:
Pope-Toledo,
Driven by George Fuller:
1 mile, 1:00 3-5

WORLD'S RECORD
AMERICAN TOURING CAR,
STRIPPED:
Peerless,
Driven by Barney Oldfield:
10 miles, 10:50 1-5

WORLD'S AMATEUR RECORD:
Frank A. Garbutt, in special car:
1 mile, 0:58 2-5

WORLD'S RECORD, 10 MILES:
Peerless Green Dragon,
Driven by Barney Oldfield:
9 min. 17 1-5 sec.

G & J Thread Fabric Tires were used on the 24 H. P. Pope-Toledo car driven by Mr. Lytle in the Vanderbilt race, winning third place, finishing ahead of all other American cars. In the course of the race one of the tires punctured; the other three tires went through the race without mishap or trouble of any sort. The tires at the finish of the race were not only in perfectly good condition, but were

ENTIRELY FREE FROM HEAT

The tires could not have been cooler or in better general condition if they had been driven but one mile at an ordinary pace, instead of 300 miles at a terrific speed.

Two punctures occurred in the tires on the 60 H. P. Pope-Toledo driven by Mr. Webb. No weakness of any kind developed in the tires.

It is not surprising that punctures occurred (and practically every contestant suffered punctures), as the road in the Hempstead Control was strewn with new tacks, nails and broken glass.

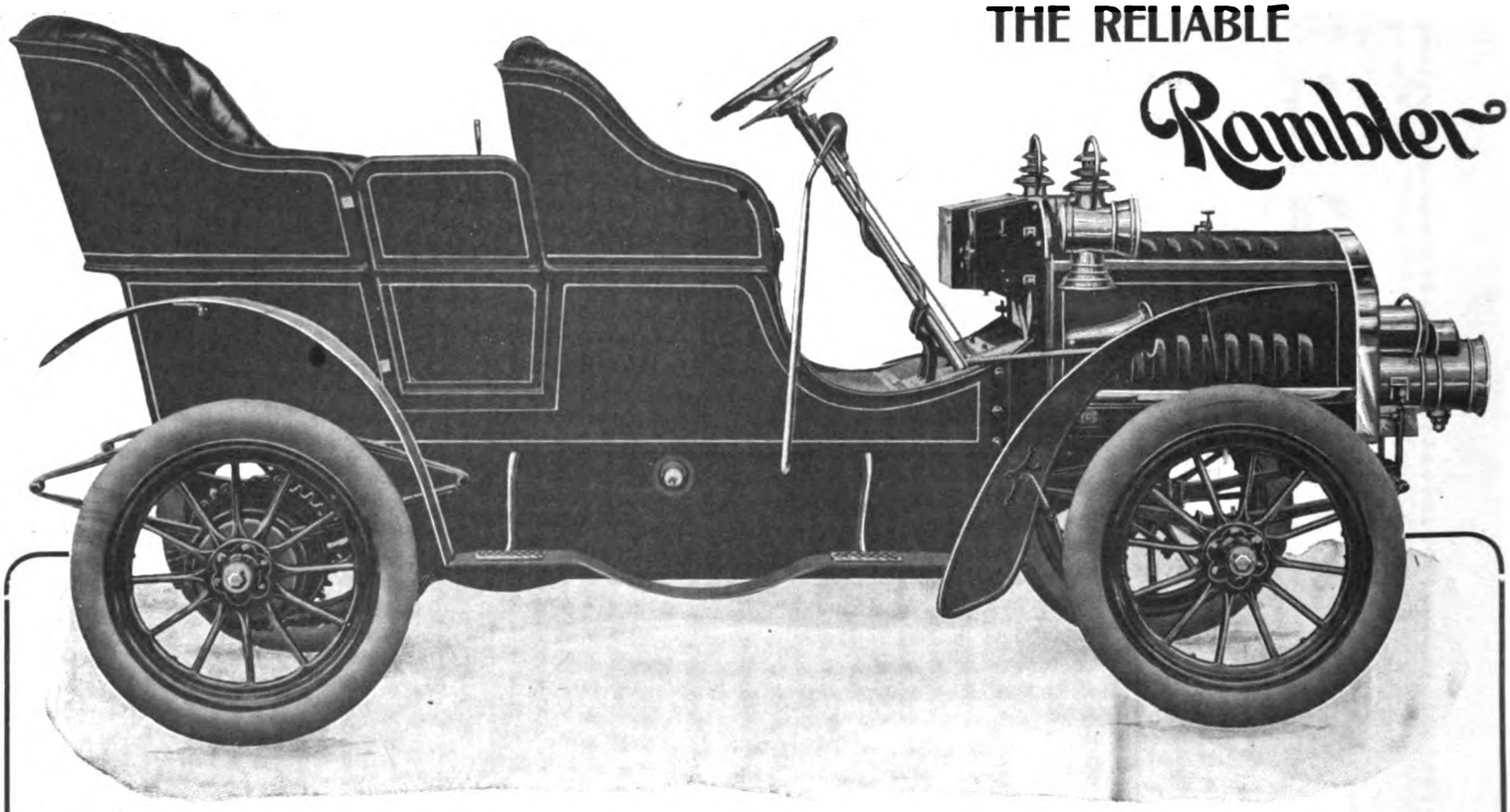
G & J THREAD FABRIC TIRES NOT ONLY FAST, BUT DURABLE AS WELL.

G & J TIRE CO. Main Office and Factory: **Indianapolis, Ind.**

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THE RELIABLE

Rambler



Surrey, Type One. 1905 Model.

Two Cylinders. 16 H. P. Immediate Delivery. $1350.

In the race at Rockford, Illinois, October 8th, a RAMBLER, 1904 model, with two cylinders, won a mile race from a 1905 model of another make with four cylinders and nearly twice the rated power.

Time, 1:17 2-5 vs. 1:19.

RAMBLER'S rated power.

Other car's rated power.

RAMBLER'S cost.

Other car's cost,

and yet the RAMBLER is not designed for speed, but for practical work—for use on rough roads and hills.

The working idea of the RAMBLER factory is simplicity—the putting together of mechanism that any one with good sense can manipulate. This at the lowest price consistent with good workmanship—a price much lower than other manufacturers', because of our enormous output, which makes possible a great buying power and the employment of each man and each machine for one detail only.

Let us tell you more about how the RAMBLER is built—and enjoyed.

THOMAS B. JEFFERY & COMPANY,

BRANCHES: { BOSTON, 145 Columbus Avenue.
CHICAGO, 304-306 Wabash Avenue.
PHILADELPHIA, 242 North Broad Street.

Main Office and Factory: **Kenosha, Wis.**

NEW YORK AGENCY, 140 West 38th Street.

REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, November 10, 1904. No. 7

KNOX GOES INTO TRUCKS

Heads a New Company That Promptly Gives Evidence That it "Means Business."

Harry A. Knox will not be so long out of harness as he anticipated would be the case when he severed his connection with the Knox Automobile Co. Although he was said to have planned an extended vacation, he has, instead, plunged into the Knox Motor Truck Co., which has been organized at Springfield, Mass., with Mr. Knox as its president and general manager. His associates will be Walter S. Pease, vice-president and superintendent, and Clarence J. Wetsel, treasurer.

The company will be a Massachusetts corporation with $100,000 capital. That it "means business" is indicated by its purchase of some 60,000 square feet of land on the corner of Beckel and Hooker streets, Springfield, for the immediate erection of a large plant. Plans are complete for a factory covering over 75,000 square feet of floor space, with a railroad frontage of about 350 feet. This property is considered to be one of the finest factory sites in Springfield. The plans call for a factory equipped with machinery of the latest type, the aim being the best equipped factory for the manufacture of commercial motor cars in this country..

Ground will be broken at once, and contracts call for the erection and complete equipment of the plant by March 1, 1905. In the interval arrangements have been made with the Baush Machine Tool Company (of which Mr. Wetsel is treasurer and manager), whereby a part of their plant has been placed at the disposal of the Knox Motor Truck Company for the immediate manufacture of their product.

Absorbs Grossman's Business.

The recently organized Motor Car Equipment Co., New York, has taken over the accessory business of Emil Grossman, which will be continued at 43 Cortlandt street. Grossman still retains an interest, being president of the new concern. Carl Kaufman, who was formerly connected with the Manhattan Storage Co., is secretary and treasurer and will be the active manager.

Buick Reorganizes and Adds Capital.

An entire reorganization of the Buick Motor Co., of Flint, Mich., took place last week, which will result in placing the concern in a position to prosecute an aggressive policy. The capital stock was increased from $75,000 to $300,000, the latter being subscribed in full.

The reorganization means a community of interests for the manufacture of automobiles, in which the Durant-Dort industries, the Flint Wagon Works Co. and the Buick Co. will be mutually concerned.

In the reorganization Charles M. Begole succeeds James H. Whiting as president; W. S. Bellenger, secretary of the Flint Wagon Works, becomes secretary of the motor company, and W. H. Whiting and William C. Durant were added to the board of directors. The company has leased the buildings of the Jackson Purifier Co. at Jackson, and will operate two establishments, one at Flint and the other at Jackson.

Parker Goes With Haynes.

Robert P. Parker, formerly manager of the New York branch of the Hartford Rubber Works, has just succeeded F. G. Carrie as manager of the New York branch of the Haynes-Apperson Co., of Kokomo, Ind. Mr. Carrie returns to his first love, the soda fountain business. In Mr. Parker the Haynes-Apperson Co. has secured an able and agreeable man, and with the new car there is every reason why the Haynes interests should be materially advanced in this vicinity.

Briscoe to Establish Eastern Plant.

The Briscoe Mfg. Co., Detroit, the well known makers of radiators, hoods, tanks, etc., have increased their capital stock from $250,000 to $310,000, which move is preliminary to the establishment of a plant in the East. This Eastern factory will be located in the vicinity of New York.

Thomas's Body is Now Protected.

On Tuesday last, the patent covering the design of the body used on the 1905 Thomas touring car was issued to E. R. Thomas and Jas. R. Koen, of Buffalo. There is said to be in existence but one other patent on automobile bodies.

HAYNES HAS A NEW CAR

Veteran Concern Departs Radically from Previous Standards—Will Employ Roller Gears.

When it makes its appearance on the market it is reasonably certain that the new car which the Haynes-Apperson Co., Kokomo, Ind., will "launch" early next month will create something of a stir.

This addition to the line will depart radically from previous Hayneses in that it will employ not only a vertical four-cylinder engine instead of the double-opposed motor which has hitherto characterized the product of the veteran company, but shaft drive will be substituted for the chain; and in place of bevel gears the shaft will be actuated by a roller gear, which is the invention of President Elwood Haynes himself, and for which a patent is pending. The body design will, of course, be of the side entrance type, and in outline and general appearance it compares favorably with anything yet produced.

A Motor World man who was privileged to ride in the new car at the factory found it characterized by ample reserve power, very flexible control and a sweetness and noiselessness of operation that was marked.

To Handle Peerlesses in New York.

As was intimated in these columns a few weeks ago, a Peerless branch will shortly be established in this city. The Peerless Motor Car Co. of New York has been formed for this purpose, with the following officers: L. H. Kittridge, president; C. G. Wridgway, vice-president; C. E. Anderson, secretary and treasurer. The management of the branch will devolve on C. G. Wridgway, who has for several years served in a similar capacity with the Bankers Bros. Co., in this city, and is a well known figure in the Metropolitan trade.

The branch will be spacious and equipped especially as an automobile salesroom and garage. It is now being erected at 220 and 222 West Forty-first Street, just west of Seventh Avenue. There will be a total floor space of 12,000 feet, which will be divided into a salesroom, storage room and repair shop. The establishment is expected to be ready for occupancy by December 15.

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WINTON LIFTS THE VEIL

Discloses the Details of His Reconstructed Line—Variable Springs a Novel Feature.

While the bare announcement of the new Winton line was startling enough, the revolutionary character of the big Cleveland concern's new policy is best understood by an examination of the principal features of the cars themselves. These furnish considerable food for thought. They reveal the wide departure from previous models that has been made, as well as the time tried and tested devices that have proved conspicuously successful in earlier Wintons, and on that account retained in the new ones.

Of the four entirely distinct models that will constitute the 1905 line, two are rated at 40 horsepower, viz.: the Model A Special and the Model A, while of the others, one—the Model B—is rated at 24 horsepower, and the other—the Model C—at 16 horsepower. The prices are $4,500, $3,500, $2,500 and $1,500, respectively, as was stated last week.

In each model the four cylinder vertical motor, water cooled and placed under a bonnet, has the cylinders cast in pairs, the heads, water jackets and exhaust valve chambers being integral therewith. The crank shaft, connecting rods and pistons are instantly removable by detaching one side of the aluminum crank case, which is split vertically. This process leaves the cylinders in place on the case and does not disturb the water tubes, carburetter tubes or any of the other motor accessories. All cam shaft gears are inclosed. A dustpan is placed under the motor and is a permanent fixture. Since all work of inspection, adjustment and replacement can be accomplished from above, it is never necessary to get beneath the motor.

While retaining, with some slight changes in detail, the well known Winton system of individual clutches, an otherwise entirely new transmission has been adopted. Instead of the usual Winton central driving chain, a propeller shaft and bevel gear drive is employed, which is claimed to withstand the effects of inexperienced or careless operation and escape without breakage. All clutches consist of one cone and one flat-faced member, acting upon a bronze member. The universal joints on the shaft are inclosed, and the drive is direct on the high gear. There is a flexible coupling between the transmission and the motor, and the transmission is directly accessible under the forward footboard. The dust and oil proof transmission case cover is instantly removable to afford inspection or adjustment.

The rear axle is steel, with a spur differential, and is equipped throughout with special roller bearings. The wheels are keyed to the axle, and a single ball joint strut limits the axle movement and absorbs all braking and driving strains. The single expansion chamber of ample proportions produces a practically noiseless exhaust. This muffler construction insures against back pressure and loss of power.

The Winton air governor has also been retained and gives to the motor an innumerable variety of speeds. The pressure from the air pump acts on the inlet valve plungers and regulates the quantity of mixture admitted to the cylinders. The cars are governed for either constant or variable pressure, at driver's choice, by a lever above the steering wheel or a spring button under the right foot. Two levers and one brake pedal control all transmission clutches and brakes.

One of tht most important of the features presented by the new Winton construction is the perfected system of ignition, which banishes dry batteries, accumulators and the ever-bothersome vibrator spark coils. In place of all these troublesome complications and sources of expense, a recently developed and reliably efficient magneto is used, which is direct connected and driven by a positive gear. In this manner of gear connection the possibility of irregular and intermittent ignition is obviated. Instead of the multiple vibrator coils, but a single non-vibrator coil, which is most durable and very simple in construction, is needed. Tests of the severest and most exacting nature have positively demonstrated the high efficiency, economy and thorough practicability of this system of ignition. The spark advance lever is attached to the steering column on top of the wheel.

A single water-jacketed carburetter, placed close to the motor, supplies all cylinders. The gasolene is pressure fed from main tank to auxiliary tank, and thence gravity fed to the carburetter float chamber. The auxiliary tank is immediately above the carburetter.

The system of lubrication is claimed to effectually solve all lubrication difficulties. A roller feed lubricator, having no springs or valves to get out of adjustment and cause trouble, worry and expense, is employed. This gives constant feed in any temperature, with light or heavy oil. There is no pressure, and the oil is fed in exact proportion to the motor speed. All motor and rear axle bearings are lubricated from the same lubricator.

The engine is cooled by water circulation effected by a gear-driven centrifugal pump. The rapid and efficient circulation of water is positive with the starting of the motor. The radiator is of ample proportions, consisting of vertical tubes, with radiating fins. A direct connected and gear driven fan insures constant suction from the back of the radiator, while a secondary suction fan is cast in the flywheel. This system of double suction insures an air circulation of volume sufficient to cool the motor under all the varying conditions of operation. An air tight casing back of and encircling the bonnet fan assures a maximum volume of suction through the radiator.

The frame is constructed with side members of one-piece channel section pressed steel. There is no sub-frame. The motor and transmission are carried on malleable drop frames.

Three band brakes are fitted—one on the drive shaft, operated by a forward movement of the high gear lever; the other two on the driving wheel links, operated by a pedal.

Remarkable claims are made for the entirely new system of springing employed on the 1905 Wintons. By it light springs for light loads and heavy springs for heavy loads are assured. A double spring of six leaves is so shackled that only three leaves are engaged when one or two passengers are carried, whereas six leaves are engaged as the load increases.

All four models are standard gauge—4 feet 8½ inches. The wheel base of the Model A Special and Model A is 9 feet; of the Model B, 8 feet 8 inches; of the Model C, 7 feet 6 inches. The cylinders of the Model A are 5¼-inch bore by 6-inch stroke, and the tires 34x4½; of the Model B, 4⅜-inch bore and 5-inch stroke, with 32x4-inch tires; and of the Model C, 3½-inch bore and 5-inch stroke, with 30x3½-inch tires.

The Week's Incorporations.

New York, N. Y.—The Chrono-Velocimeter Co., under New York laws, with $25,000 capital; to make automobile attachments. Directors—Junius Howe, E. O. Towne, Sara J. Towne, New York.

Chicago, Ill.—William Herrick Co., under Illinois laws, with $50,000 capital, to manufacture automobiles and parts of same. Incorporators—William Herrick, Frank E. Drake and Robert Pringle.

Washington, D. C.—Narragansett Motor Co., under District of Columbia laws, with $25,000 capital. Incorporators—H. G. Sheeler, W. S. Clinton, P. H. Kennedy, Isaac Wynne and W. A. Swan.

Tacoma, Wash.—Washington Automobile Co., under Washington laws, with $10,000 capital, to manufacture, sell and rent automobiles and auto boats. Incorporators—F. L. Stiles, D. A. Young and Harry Hurley.

Jersey City, N. J.—Standard Storage Battery Co., under New Jersey laws, with $500,000 capital, to manufacture and deal in electric storage batteries. Incorporators—Louis B. Dailey, H. O. Coughlan and P. Stafford Moritz, Jersey City.

Additions to Retail Trade.

R. G. Carpenter, Houghton, Mich., has added an automobile department. He will handle the Olds line.

William Groth, Appleton, Wis., will add an automobile department to his business. He has arranged to handle the Olds line.

The East Coast Automobile Company is the title of a new concern organized at Jacksonville, Fla. A store at the corner of Ocean and Forsyth streets is being fitted up for it.

De Loura Discontinues Automobiles.

It was voted last week by the stockholders of the De Loura Automobile Mfg. Co., of Ft. Dodge, Iowa, to change the name to Iowa Founders and Mfg. Co. The manufacture of automobiles will be discontinued. H. D. De Loura, who organized the company, has sold his stock, and will go to the Pacific Coast.

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OLDS ALTERS POLICY

No More Big Territory for Agents—How Size of Shipments will Govern.

While not exactly radical, the Olds Motor Works will henceforth pursue an altered policy in marketing their product. Instead of allotting territory to a comparatively few dealers with power to appoint sub-agents, the Olds aim will be to, as far as possible, deal direct with all agents, both great and small. The limit to which they will go in this direction, however, will be measured by the size of the dealer's order. They will ship Oldsmobiles only in carload lots, and the agent who is not big enough to handle such quantities must perforce be content to be a sub-agent and draw his supply from the larger agent in his particular vicinity.

This information was imparted by R. D. Chapin, sales manager of the Olds Motor Works, who was in New York last week. This change of policy will, of course, affect a number of territorial agents, among them the Oldsmobile Co. of New England, which hitherto has controlled the New England States. Under the new arrangement, its range of action will be limited to Boston and vicinity, a factory representative, C. H. Larson, having been delegated to appoint agents in the outside territory.

"In order to be fully prepared for the rush of business that is expected next spring, both the Detroit and Lansing plants have been working full force for some time," said Mr. Chapin in discussing the outlook for next year. "We will have two thousand new cars ready for shipment on the 1st of next March. We will be better prepared to take care of our agents than ever before, and hope that we have so planned things that no sales will be lost to Oldsmobile representatives through inability to get the machines as fast as they want them.

"No heavy, expensive cars will be built by our factories, but we will have the largest line of light machines of any factory in this country. There will be two new models for next season, and some announcement will be made concerning one of them inside of the next two weeks. Our line for 1905 is really a very interesting one from the standpoint of the dealer. In fact, the travelling men who are out on the road report to us that the only trouble we are likely to have next season will be to make deliveries.

"It is not probable that a New York branch house will be established when the contract with our present representatives expires at the end of the year. The only branch houses we now have are those at Detroit and Boston, and it is against the policy of the company to open any more. We would rather have an agency in this city, if the proper representation can be secured, and some arrangement is expected within three or four weeks. There will be a few changes in our representation for the coming season, but not many.

Brampton's Bid for American Favor.

Hereafter the well known Brampton chains will be made in four standard American sizes, viz., 1-inch pitch by ⅜-inch, with 9-16-inch roller; 1-inch pitch by ½-inch with 9-16-inch roller; 1-inch pitch by ½-inch with ⅝-inch roller, and 1¼-inch pitch by ½-inch with ⅝-inch roller. The 1904 Winton and Olds cars were equipped with Brampton chains which were made specially for those machines. Heretofore the Brampton chains were made only according to the metric system of measurement and would fit only the foreign cars. Charles E. Miller, No. 97 Reade street, New York City, who is the sole American agent, received samples of the new sizes on Wednesday.

Reo Will Have New Gearing.

Details of the production of the new Reo Motor Co. are leaking out by degrees. It is now known that the price of the 16 horsepower 1,400-pound touring car which, in addition to a runabout, will be marketed, will be $1,250, and that it will incorporate an innovation in the matter of transmission gearing. If the weather is favorable it is hoped to have the first of these cars to make the journey by road from the factory at Lansing, Mich., to New York. R. M. Owen, sales manager of the company, is now at Lansing, and hopes to be able to effect the necessary arrangements.

Sues Flagler for Large Sum.

In the United States Circuit Court, this city, last week, William McCay, of Pasadena, Cal., sued John H. Flagler for $212,500. He alleged that in May, 1900, he agree to turn over to the American Motor Company the Monitor Vapor and Engine Company, for $76,785, in cash and stock of the American Motor Company, and that Flagler was to buy $75,000 of the Motor stock.

The plaintiff alleges that he discharged his part of the contract, but that the defendant failed to do so.

Pope Men to go to Paris.

The Pope Motor Car Co.'s exhibit at the Paris show will be in charge of H. A. Leinhard, manager of the Pope foreign department, and Harold L. Pope, who has had a deal to do with the development of the Pope-Hartford car. They will leave for Paris on the 22d inst. H. H. Lyttle, who will demonstrate the cars, is already on the ground.

Wichita Will Have More Room.

Work has been commenced on a $14,000 building at Wichita, Kan., the entire ground floor of which will be occupied by the Wichita Automobile Co. The building has a length of 150 feet and width of 50 feet, facing on Lawrence avenue. The space will be divided into a salesroom and repair shop.

Huff Goes to Kokomo.

The E. S. Huff Co., makers of spark coils, have removed to Kokomo, Ind.; they formerly were located in Detroit.

RETARDING THE ELECTRIC

How Refusal to Recognize Conditions Results in Loss of Sales and Patronage.

That trade in electric vehicles is almost wholly dependent on the presence or absence of charging stations is the view that is taken by Henry Goodman, who is the travelling representative of the Pope Motor Car Co.'s Waverley department in this city. The fact has been known in a general way, but it was not supposed that the law of supply and demand operated with such absolute disregard of other conditions.

"Wherever there exist facilities for charging, there business in electric vehicles is or can be done," said Goodman to a Motor World man one day this week. "On the other hand, no business can be done where there are no charging stations.

"As an example of the influence that ample facilities for charging and a moderate cost exerts on sales, I will cite Rockford, Ill. That is a little town of about twelve thousand inhabitants, and there are fifty electric vehicles in use there. The facilities for charging are all that can be desired, and the charge for current is only five cents per kilowatt. This makes the electric a splendid proposition in the town, as is shown by the number of cars there.

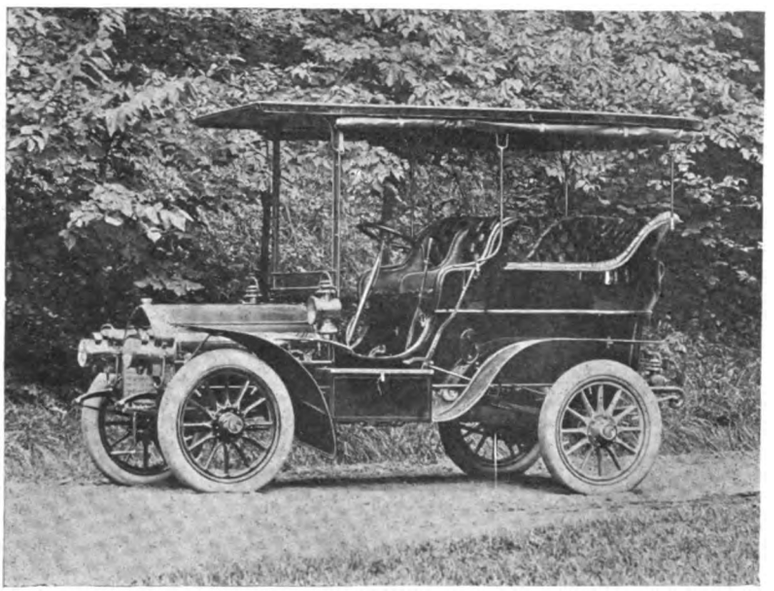
"Down on Long Island, where I have been travelling during the last week or two, a very different state of affairs exists. There are plenty of people who want electrics, and it would be an easy matter to secure orders if there was only some way of charging, and at reasonable rates. But the charging stations are few and far between and the prices asked for current are exorbitant. In Far Rockaway, for instance, they ask 18 cents per kilowatt, and there are some places where they charge as high as 20 cents.

"The charge for current should never exceed 10 cents per kilowatt. Here in New York the usual charge is five cents, and from that up to eight cents is the usual price in places where much charging is done.

"Why don't the electric light or power companies make a bid for business of this kind? Well, for a variety of reasons. Sometimes it is indifference or lack of enterprise. Again, it is because the companies make only enough current for their own uses. Or, they run their power houses only at night, and when a man comes along and wants some current, they don't care to start their engines for such a little job.

"The remedy is to either bring about a change in the attitude of the light and power companies, or to have the tradesmen in the towns put in charging plants of their own. The latter is, perhaps, the easier plan. Certainly it presents the fewer obstacles. A dealer or garage keeper can put in a plant for $1,000 that will take care of any business he is likely to get for a long time. By installing such a plant he is pretty certain to get all the electric business he can handle, and if he is a dealer also he can build up a good trade in electric vehicles."

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GRAND PRIX

AWARDED

HAYNES AUTOMOBILES

At St. Louis Exposition.

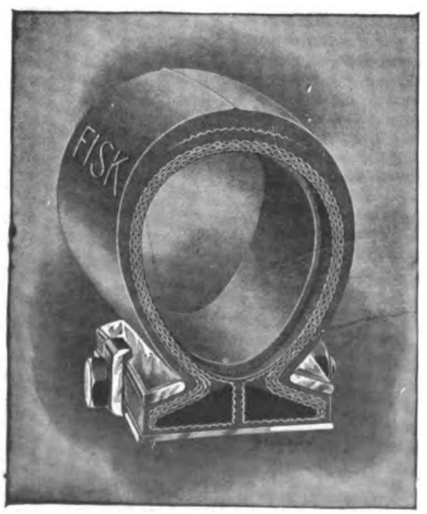
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The Struggling Amateur Spirit.

Although the American Automobile Association holds no recognition of or for it, signs are not wanting that the spirit of amateurism is struggling to make itself heard or felt in the realm of automobile sport.

We are given to understand that Messrs. Frank Croker, William Wallace, H. L. Bowden and other gentlemen of means who maintain racing "stables" and on occasion drive their own cars, are among those who would welcome the drawing of a line of distinction between those who race for sport's sake and those who make a business of the sport or the hired men who race because their employers order them to race.

Whether the greasy blue "jumpers" affected by Mr. Alfred G. Vanderbilt's "man" or the shirt sleeves and suspenders attire worn by other racers for revenue only has had anything to do with causing the amateur spirit to shift uneasily, is an interesting speculation. But, as Mr. Wallace himself is a member of the A. A. A. racing committee, it is evident that if the spirit really and truly moves him, he should have small trouble in giving it definite shape and purpose.

The revival of the subject revives also all the arguments which the Motor World presented during its campaign for an amateur definition at the time the A. A. A. was formulating its racing rules two years ago. The arguments are as sound to-day as they were at that time, and if anything the present situation simply adds strength to them.

"Cash vs. Plate" was then the popular style of the discussion, and it is a matter of record that a man of such affluence and influence as Mr. Albert C. Bostwick indignantly spurned the suggestion of littering his household with the baubles encompassed by the term "plate"; it was pointed out that automobile racing was such an expensive sport that even rich men welcomed the cash prizes as means of reducing the cost of indulgence. We also had held up to us the pigeon shooters and other true blue "sportsmen" who accept cash without soiling the sanctity of their particular sport or without offending the spirit of amateurism. These contentions, assisted by foreign precedent, prevailed.

It was inevitable that a revulsion of feeling or sentiment should ensue. The men who make a business of sport and who race for the money there is in it, and those who race because of the love of sport, are not and never were of a class, and cannot compete on an equality. They have little in common. It is a violation of decency and of the fundamental spirit of sport that they should be herded together and marked with the same brand. It is high time that the sheep and the goats were separated, and if Mr. William Wallace is correctly quoted and has the courage of his convictions, he is splendidly positioned to play the part of shepherd. Will he do so?

Tires and Their Protection.

One of the interesting features of present-day motoring is the increased use of tire protectors. That there is an increase can scarcely be doubted. It is only necessary to notice the number of cars equipped with some one of the many devices of the kind or to see how stores are beginning to stock them.

As a temporary expedient—as, for example, where a tire is in bad condition, or when a trip is to be taken over vile roads, or when heavy rains have made quagmires of the highways—tire protectors do not seem illogical. But as a permanent adjunct, to be used always, on all sorts of roads and in all weathers, they do have an appearance of incongruousness. The ordinary pneumatic tire is turned out in what is supposed to be a complete form. A thick covering of rubber is provided to take the road contact and to protect the delicate and highly important air-containing inner tube. Tough and strong fabric also surrounds this tube and checks any tendency to burst or give way under the tremendous air pressure. Why, then, is it necessary to envelop this complete tire in a crude and unsightly covering that does not properly form a part of it and is palpably an excrescence?

The answer is, of course, that the chief purpose served by a tire protector is to prevent side slip. Almost without exception it is made with some device on the tread that bites into the road and hinders, if it does not prevent, lateral movement of the wheels. Metal in some one of a variety of forms is usually employed for this purpose, and with considerable success. The little spike-like protuberances take hold in the hardest and slipperiest roadbed and counteract to a remarkable extent the ever-present tendency of the car to travel to one or the other side of the road.

But the users of such appliances seldom stop to think that they are doing great harm to the surface of the roads over which they drive their cars; or, if they notice it, are entirely indifferent to the fact. They do not bear in mind that the hard, smooth surface has cost a lot of time and money in the attainment, and that great injury can be done by one car; while a number of them can and will leave a road in such a condition that a new covering will become absolutely necessary. They forget, too, that heretofore one of the chief boasts of motorists is that their cars, unlike horse-drawn vehicles, improve rather than injure the highways over which they pass.

The matter is pretty certain to attract attention before long. It was only a few weeks ago that some New Jersey road supervisors put on their thinking caps to discover what sort of vehicle it was that left tracks behind it, and when they arrived at the conclusion that it was automobiles with spike covered protectors they set to work to discover some means of nipping the evil in the bud. Their example will undoubtedly be followed by other officials, and if the use of protectors

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becomes at all general a crisis will be reached and some modification of the anti-slip devices imperatively demanded.

Sales of Second Hand Cars.

Ordinarily the fall is not apt to be regarded as a particularly good time to invest in second hand cars. The bulk of buyers will wait until spring, considering that the nearness of winter makes it inexpedient to lock up money in a fair weather article like the automobile.

But there are a limited number of people who take just the opposite view. They are shrewd enough to see that the disinclination of most motorists or would-be motorists to invest in the dying season is precisely the reason why they should do just the reverse. The scarcity of buyers, coupled with the anxiety of sellers to dispose of cars before winter comes, operates to their disadvantage. Frequentiy a better bargain can be driven in the fall than in the spring, for there is a keen desire on the dealer's part to get rid of the old model before it depreciates still more, as well as to obtain the cash for it in place of having to give it storage room during the winter. These considerations affect the dealer materially, and a customer who really wishes to buy a second hand car and is willing to pay a reasonable price for one is seldom allowed to depart without having struck a bargain.

In addition to the concession in price which the buyer is almost certain to obtain, he knows that there will be plenty of enjoyable riding during the next few months, which would be lost if the purchase was deferred; and, as the car is a second hand one, there is not the same reluctance to drive the car over bad roads as would be the case if it were new. Consequently, unless the winter is a severe one, like that of 1903-'04, the car is likely to be kept in commission right through until spring.

Carrying the Spare Tire.

Few motorists who take runs of any length ever venture forth without an extra tire. One or more inner tubes and an outer cover usually comprise the outfit. The bestowal of the tubes is an easy matter. They can be so rolled and wrapped up that they occupy little room, and are disposed in the tool box or other receptacle provided for odds and ends. But the outer cover is a very different matter and gives no end of trouble.

Of course, the ideal way is to put it out of sight. Then it is not obtrusively drawing attention to the unreliability of the pneumatic tire, like a death's head at a feast. But the trouble is to find a place to put it where it will not be seen. A few thoughtful and ingenious designers provide a place of this kind—as, for example, under the tonneau flooring. In the overwhelming majority of cars, however, no provision whatever is made for an extra tire, and the owner is left to stow it wherever he pleases.

As a result it is to be seen in a variety of places. Perhaps the most popular is that in front of the radiator or bonnet, where it is secured by straps. Sometimes it is placed between the wheels, resting on the step; if the car is equipped with a canopy the tire is nearly always placed on the top of it. Of late the practice of putting it in a leather cover to protect it from dust, dirt, oil, sun, rain, etc., has been more followed, but it is by no means universal.

With the coming of the side entrance car it has been discovered that there is a new and better way of disposing of the tire. That is to fasten it to the back of the car, where, as there is no tonneau door to open, it is not in the way. Already many users of side entrance cars are making use of this wrinkle, and finding it very satisfactory.

As has been said, however, the ideal method is to place it out of sight. Then it ceases to be an eyesore and is completely protected.

The Subject of Springing.

So difficult has the springing problem appeared that there seemed room to doubt that it could ever be entirely solved. It is gratifying, therefore, to note that there is a tendency to approach it on new lines and with a recognition of the peculiar difficulties that must be overcome before any marked degree of success can be attained.

It should be borne in mind that not only must the springs of an automobile be constructed to cope with the strains and stresses of varying loads, but that speeds and roads also vary greatly. In testing a car recently we had this made very plain. With a normal load the springing was found to be just right; up to a certain point, the car rode luxuriously, even when driven at high speed. But when tried over some particularly villainous street crossings it was found that there was not sufficient strength in the leaves to take up all the jar; the result was that the body of the car came down with a bang each time one of these crossings was passed at full speed, and a fracture of one or more of the leaves was momentarily expected.

Now, if thicker leaves, or more of them, had been used, the car would have been too stiff except over the crossings. What was needed was a reserve force for utilization in extreme cases, such as that already mentioned. The fitting of rubber blocks to act as buffers between the springs and the body, so frequently seen on both cars and horse-drawn vehicles, is a crude attempt to provide a reserve force. It does good where a car is plainly undersprung. But it is, at best, a makeshift, unsightly and unmechanical, and can have no permanent place in automobile construction.

What is needed is a simple and reliable device that will automatically adjust itself to ever varying circumstances, and so give uniform results, regardless of the load and speed of the car and the character of the road.

The decision of the Automobile Club of America to seek to effect the passage of the much needed and long mooted universal lamp law is worthy of all praise and unstinted support. It makes for the safety of road travel, but, despite the plainly apparent fact, we fear it is foredoomed to failure. It would require the gentle farmer and equally gentle teamster and other "common people" to go down in their pockets for the purchase price of lamps, and the wise "statesmen" who fill our legislative halls are unduly timid in enacting legislation of the sort. But at that such a measure will throw the "common people" on the defensive and show that their desire for safe travel is limited merely to encumbering "the other fellow." It will be a point gained that must prove of assistance if anti-automobile legislation is again attempted.

It makes a great deal of difference when a dealer closes his books for the year whether he reckons from January to January or, as some do, counts his profits when the selling season comes to an end, say about October 31. In the latter case the showing is a much better one—on paper—than if figured at any other time. The dull months are still to come, with their steady outgo and meagre income, and they put a vastly different face on the matter. A big slice of the figured profit goes for those expenses, which can in no way be cut out.

The proper way to do is to wait until the first of the year before taking an account of stock. That is the turning point of the year. With it left in the rear it is pretty safe to consider that the profits shown by the books are real profits and can be disposed of in whatever manner is deemed wise.

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FOR DELIVERY PURPOSES

Remarkable Success of Detroit's Auto-Express Company—Figures Show Cost of Operation.

Some convincing testimony as to the adaptability of automobiles for delivery purposes in cities is brought out by the experience of the Auto-Express Company, which uses a number of Oldsmobiles in serving stores in Detroit, Mich. The company has been in business long enough to have made a most thorough test of the reliability and efficiency of automobiles as contrasted with horse-drawn vehicles, and Mr. Scrimger, of the company, has given some interesting figures as to the relative cost of the different modes of transportation.

He declares that the automobile has proved so superior to the horse from every point of view that comparison is almost ridiculous. The company is now using twelve vehicles, doing the work of one hundred of Detroit's largest stores, and it is said that in reliability, speed and economy of operation some interesting records are being made. The large tonneau cars now replacing the small ones have proved equal in amount of service to two or three horse-drawn wagons each. The machine used on the heaviest route is covering upward of seventy-five miles daily, at an average cost of about $5 per week, exclusive of help. Mr. Scrimger says that from his knowledge of horses in this work it would require three wagons and five horses to do what this machine is doing.

Exclusive of help, it may be said that the machines cost less for maintenance than horses and wagons, notwithstanding the great difference in service rendered. In other words, automobiles cost no more to operate than wagons, and do two or three times as much work in a given time. The fact of the matter is that horseflesh simply cannot stand the steady strain that is put upon these machines. One argument sometimes advanced in favor of horses for this work is that a reserve machine must be provided against accidents. Mr. Scrimger says in answer to this that no delivery business using horses can manage without reserve animals, and, further, that there must be a reserve for every animal in use—sometimes two—whereas one reserve automobile in five has been found sufficient.

The Auto-Express Co. has been at some pains to learn what each machine costs for operation, and the result of 11 weeks' work with the large car on the heaviest route has been reduced to a table showing that in this time it covered 5,016 miles, an average of about 76 miles per day, making 6,405 stops to deliver packages. The cost for the eleven weeks was: Repairs, $7.06; repair labor, $13.80; gasolene, $31.95; lubricating oil, $4.02; total, $56.83. The item for help was $114.40 for driver and $44 for jumper boy, making $215.23 in all, or $19.56 per week. The cost per mile worked out at 4.2 cents, and the cost per package 3 1-3, but this was during the light summer months, and the machine is delivering nearly twice as many packages without increase in weekly expense.

While this is not considerably more than it would have cost to operate one wagon, it must be remembered that it would have taken, according to Mr. Scrimger, five horses and three wagons to do this work, since twenty-five miles a day of steady going four days a week is about the capacity of the best horse. The item for help is $5 a week more than would be paid to an ordinary wagon crew, but here is an actual saving of about 200 per cent, because the man and boy on the automobile delivered nearly three times as many packages as they would have done with a horse and wagon.

First Waverley Truck Appears.

The Waverley department of the Pope Motor Car Co. has for some time been at work on a heavy electric truck model, and has begun taking orders for it. One of the first orders was for a five-ton truck, placed by the Indianapolis Brewing Co., of Indianapolis.

A number of novel features will characterize the trucks. The two-motor drive through side chains direct to the rear wheels is employed. For the purpose of precluding overloading of the motors, a double reduction is employed. The spur gear on each of the motor shafts meshes with a secondary gear on a jack shaft, the motor being hung lower than usual, for the purpose of providing room for the shaft. On this jack shaft and alongside of the gear wheel is mounted a sprocket wheel, which carries a chain to the rear wheel in the usual manner.

The result is that the motor maintains a high speed, even when the truck's load is heavy and its speed slow. The danger of the motor burning out or otherwise sustaining permanent injury is thus reduced to a minimum, as it is impossible for the overload to exceed 100 per cent at any time, whereas if the usual method of gearing was employed the overload could reach 200 or even 300 per cent.

Carriage Makers Adopting Tonneaus.

Just when the automobile tonneau is on the wane the carriage builders are taking it up.

"The tonneau car is the newest style in carriages," said a carriage tradesman who attended the carriage builders' convention at Milwaukee. "It is the body of an automobile set on carriage wheels, and built to be drawn by two horses. It will hold seven persons. Several are on exhibition at the World's Fair. As yet it is too early to determine whether the style will become a fad. It was originated by the Columbus Buggy Co. Every manufacturers has from twelve to forty new styles each year, but they are not usually radical departures from the old models."

FOR RAILWAY SERVICE

How the Use of Automobiles With Flanged Wheels is Increasing; How they are Employed.

It will doubtless be news to many people when it is known that there are at present more than one hundred Oldsmobile railway inspection cars in use, and that new types for various uses on railroads are being constantly developed to meet the demands for them. The Olds Motor Works first conceived the idea of a small car built to railroad gauge, with flanged wheels instead of rubber tires, to be used as an inspection car by minor officials, such as track inspectors, construction engineers and bridge men. The first car was a small runabout of the familiar Oldsmobile pattern, built with a few slight changes in the chassis, and having a dos-a-dos seat for four persons in the centre.

This pioneer car was tested out for 8,000 miles over the Michigan Central lines, and created a profound interest everywhere. While equipped with an ordinary single cylinder motor of only 4½ horsepower, the machine demonstrated its ability to pile up an enormous mileage, and had no trouble in climbing any grade that could be negotiated by an ordinary locomotive. The fame of the "gasolene locomotive" spread to all parts of the world, and the company found that it had really discovered that much-sought prize, a "long-felt" want, so the manufacture of the railway inspection car was taken up in earnest.

Following the introduction of these handy little machines a never-ending succession of inquiries came from America and abroad for other types of railroad automobiles, for passengers, for freight, for construction and repair work, even for switching purposes, to replace ordinary locomotives. This demand the experimental department has been working on for the past year, and the result is partly shown in a large car intended for a combination passenger and construction machine. With its large tonneau, this vehicle will comfortably carry six passengers, besides two persons on the driver's seat. Without the tonneau, there is a long platform on which to carry an entire outfit of repair tools, with the crew, thus actually doubling its usefulness and making it almost indispensable to any modern railroad system.

The uses to which these cars will be put in various places are almost without limit. One small road in Utah expects to use them for carrying passengers on a short "spur" line, giving frequent service between points which provide hardly enough traffic to pay the coal bills of a locomotive. Yet, this little car will do the work and show a nice profit on it. Other roads will purchase them for the use of division officials and inspectors, for regular duties and emergencies. Only a railroad man can fully appreciate the advantages of a car of this kind, but it may

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be explained that the automobile is always ready, needs no firing up; the expense of maintenance and operation is almost nothing, compared with the locomotive, and the man who uses it is his own engineer, fireman, brakeman and conductor. Moreover, the automobile is so arranged that it may be lifted bodily from the rails, like a handcar, and carried around a break or obstruction, where a locomotive would be hopelessly stalled.

In use on electric roads, the automobile has a field even wider than on those operated by steam, and officials of these corporations are taking much interest in the matter. It must be remembered that the gasolene car is independent of overhead wiring, powerhouse and everything else except its supply of water and gasolene. Perhaps the greatest argument for the automobile on trolley lines is found in the problem facing every street-car company of caring for the light traffic at late hours. On certain lines in Detroit, it is said, the cost of hauling each passenger after 1 o'clock in the morning is nearly $1—this because of the necessity of operating the power plant to supply a very small number of cars. Being self-contained, the automobile could in this case turn a deficit into a big profit—which applies to every large city in the country as well as to Detroit.

The efficiency of these railroad automobiles, compared to those used over ordinary roads, is remarkable. Having a smooth roadbed, they run with a velvety motion that astonishes the passenger, and there are no tire troubles. This smooth motion led one track inspector who tested the small car to say that it did not suit his purpose, since he wanted to "feel" every bad place in the roadbed as he went over it; but this is a "good fault," and easily remedied by eliminating the springs entirely. In the way of repair bills, the machines are making an odd demonstration of the fact that most of the troubles automobiles are subject to arise from rough roads. Letters from railroads using them show that repair bills are almost nothing, while the expense of operation, mile for mile, is insignificant beside that of an ordinary pleasure runabout.

Railroad Automobile to Try for Record?

There is a report in circulation among the employes of the Lackawanna Railroad that the company is having a railroad automobile built at Buffalo to break the time record between that city and Hoboken. It is said that in some respects the machine will be like one that President Underwood, of the Erie Railroad Company, has had built for that line. The Lackawanna machine, however, will be much larger and built to make the trip between Buffalo and Hoboken in eight hours. It will be constructed on automobile principles, but with flanged wheels, and will carry a caboose.

C. R. Bissell is circumnavigating the globe in the interest of the Oldsmobile. He was last heard from at Ceylon.

TRUSSED FRAMES NECESSARY?

Expert Souther, Agreeing that Side Entrance Cars are Permanent, Answers Affirmatively.

Pressed steel frames, so extremely popular with the manufacturers to-day, are giving some trouble. It seems to the writer that the striking up of shapes from sheet steel into frames that suit the eye, with too little regard for the work that must be done, has been carried to the extreme. What suits the eye best will not do the work best; and if such shapes, forms and dimensions were used as would properly do the work the eye would be offended in its present notion on the correct outward appearance of an automobile.

The question of material is a serious one. In order to get the intricate and complicated shape pressed up from steel it must be a fairly soft and tough steel. This means that it must be a weak steel as well, as compared with the much stronger steels that cannot be struck up into complicated shapes.

The side members of the pressed steel frames in use to-day are uniformly not deep enough to properly support the load put upon them, with its accompanying shock and sudden strains of impact. If the present dimensions are continued every one of the frames in use should be trussed against vertical loads; some of them are. The truss is an objection to look at unless cleverly hidden under the body of the car.

No good bridge engineer would think for a moment of making a flat girder bridge to carry loads that the automobile has to carry under automobile conditions with no greater depth than given to the side frames of an automobile.

In addition to the weakness of design comes the necessity of perforating the side frames with many holes to admit of the passage of levers, of riveting, of crossbars, spring hangers and other attached parts. The metal is too thin to properly attach some of these smaller members. There have been many cases where the side frames have broken because of the twisted and wringing action of the side members. Rivets have actually been torn through the flat surfaces of the side frame.

Without going to proper and ugly depths of side frames or resorting to awkward trusses, there seems to the writer to be a good, sensible way of accomplishing the object. It is by resorting to composite structure of wood and steel.

Side frames as now built, properly reinforced by well fitting wooden fillers, will undoubtedly remove many of the objections now existing in the all pressed steel frame. The wooden filling pieces must be made to fit perfectly, so that steel and wood will work together without any lost motion and without any possibility of the thin pressed steel crumpling or wrinkling before the wood begins to take hold and do its portion of the work. The wood has a peculiar stiffness and resiliency not possessed by the soft steel, and has been used with wonderful success in the composite structure of light, high speed yachts and launches.

Wood is comparatively little injured by holes necessary for the attachment of various members of the structure. Steel is much injured thereby.

The side entrance touring car has probably come to stay, and it presents one small problem that must be met by an exceedingly stiff frame. This is the sagging of the frame, so that the side door will pinch when the car is loaded.

If all steel is to be continued, then the automobile engineer must resort to accepted truss construction and depart from the exceedingly neat shapes in use to-day.

HENRY SOUTHER.

Largest Order Ever Placed.

What is probably the largest single order—values considered—for cars ever placed was recently given to the Belgian concern which makes the Pipe. The cars are to be used by a company that has been formed to work an automobile "diligence," or public service, in Central and South Italy. The order is for 600 chassis, 200 omnibus bodies and 300 wagon bodies.

The chassis will be so constructed that an omnibus body or wagon body can be fitted as occasion arises; the change from one type of vehicle to another occupying only half an hour. The omnibus body will be built so that, while in summer it can be open, it can be closed in winter. The omnibus will carry twelve passengers, and the wagons 2,000 kilos. (nearly two tons) of goods.

The Italian government and municipal authorities have given their support and assistance in a most practical manner. Some of the roads to be traversed present unusual difficulties, but it has been arranged that all awkward corners shall be done away with, and in some cases bridges will be built across ravines. The Transport Co. will enjoy the same privileges as the Italian railway companies, and, acting as feeders, they will greatly assist the railways, so that other railways and the motor diligence service will in no way be competitors.

On every road there will be fixed stopping places, at which only the passenger vehicles will stop to take up or set down. The municipal authorities of each city or town have agreed to furnish a proper station, with a waiting room, where tickets will be issued, and the comfort and convenience of passengers generally looked after. It is expected that the first vehicles will be running on January 1, 1905.

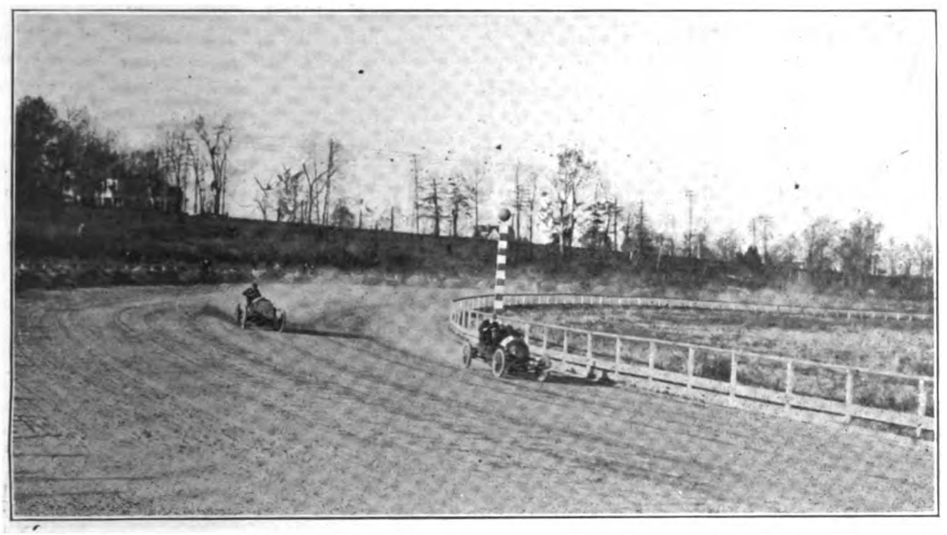
A garage is to be opened at Tacoma, Wash., by H. Hurley. He has secured temporary quarters at No. 1,716 Pacific avenue, which he will occupy until permanent ones are leased.

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KULICK'S GREAT VICTORY

Little American Car Beats Big Foreign Racers—Kiser's Metropolitan Debut Inauspicious.

Comments that were about equally divided between doubt and derision greeted the announcement, made last week, that the Ford Motor Company would like to arrange a match for their 20-horsepower racing skeleton with the winner of the match race between the Renault and F. I. A. T. Vanderbilt Cup cars. To the partisans of the foreign cars the idea of a 20-horsepower American machine, made by putting two 10-horsepower stock motors together, entering the lists as a competitor of two European machines of 60 and 90 horsepower, was not to be taken seriously. No match was made, but the Ford met the two big machines last Tuesday in the International Cup race at the Empire City track, and defeated both of them. What makes the victory all the more remarkable in its thoroughness is the fact that the Ford had the use of but half its power for the last two miles of the five-mile contest. The Ford had a lead of 150 yards as the third mile was started, when the bearings of one of its engines got out of order and it was forced to finish with half the power it had started with.



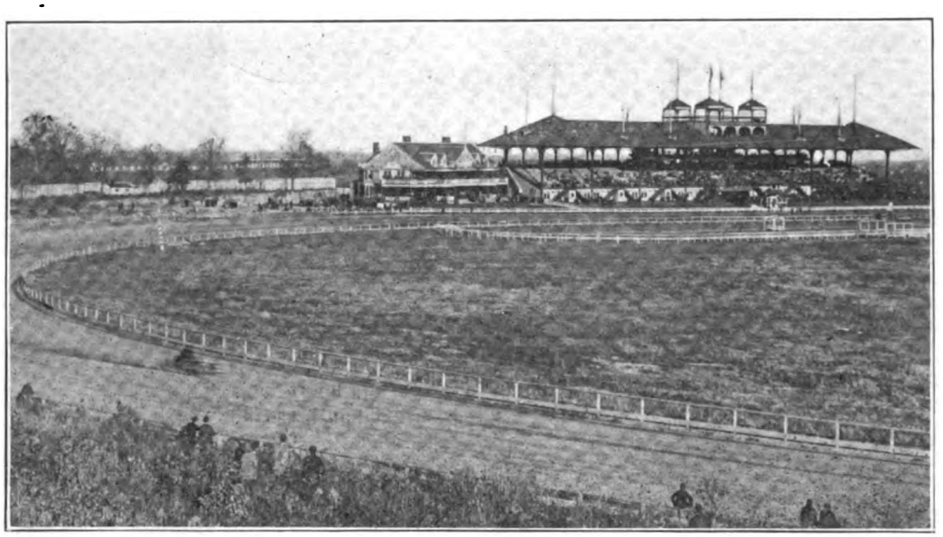
BERNIN LEADING SARTORI.

Coming so soon after the defeat of three of Europe's greatest cars by Oldfield and his Peerless seemed to make the Ford's victory all the harder for the anti-Americans to bear, and the behavior of the spectators in the grandstand and those on the clubhouse balconies showed plainly where their sympathies were. When the little Ford swept over the tape just its own length ahead of the great red Renault, the grandstand occupants stood up and cheered Kulick until he came around again and stopped in front of the judges' stand. The clubhouse contingent had become very enthusiastic when Bernin started to cut down Kulick's lead in the last two miles, and some of them were almost excited when he so nearly overhauled the Ford in the home stretch. When Kulick had crossed the line a winner, there were a few shouts of approval from the clubhouse, but mostly the people there maintained a more or less dignified silence.

The victory of the Ford should not have been so unexpected, for it had shown its quality the same day that Oldfield drove the Peerless Green Dragon home a winner in the ten-mile world's track championship at the same course. In an exhibition that day, it will be recalled that the Ford covered five miles in 4 minutes 43 3-5 seconds. Not only was this a new world's record for light and medium weight cars, but it was faster than the time for the same distance made by any of the three big foreign racers the same day. Oldfield, it is true, had made the first five miles in his trial heat in 4:41 and in 4:42 in the final, but none of the foreigners came within ten seconds of the Ford's record, Sartori's time of 4:55 in the final being their best performance.

The only race the trial heats produced was when the Ford defeated the 25-horsepower Standard by three-eighths of a mile in the three mile contest. W. G. Brokaw had entered both of his Renault racers, the 30 and the 60 horsepower cars, but they did not race, and the higher powered one qualified by default. The 90 horsepower F. I. A. T. was the only entry in the third heat. The Ford was on the pole in the final, with the Renault next and the F. I. A. T. outside. They were sent away in a rolling start, and Bernin turned in behind the Ford at the first turn, after making an unsuccessful effort to take the lead, Sartori trailing his opponents. The Ford gained on the back stretch, and Kulick received a great ovation from the grandstand occupants when he finished the first mile 50 yards in the lead. Sartori was 10 yards back of Bernin at the time. Kulick kept on gaining in the next mile, and had 100 yards' lead as he began on the third circuit, while the thoroughly aroused crowd stood up and cheered him.

Going into the first turn of the third mile, Sartori skidded badly and almost went through the outer fence. He ran up the back stretch to the half mile pole, and then turned back when it was found that his right hand front tire had come off. The Ford kept on increasing its lead over the Renault, and was about 150 yards ahead at the end of the third mile. Kulick seemed to be in trouble in the fourth mile, but Bernin did not gain much in that mile, in spite of the Ford's mishap. Bernin did gain very rapidly in the last mile, and it seemed as if he would catch Kulick, but the latter managed to defeat the crack French car by a length. The spectators in the grandstand were nearly frantic when defeat loomed large for their favorite, and they gave emphatic vocal evidence of their pleasure when Kulick won. The band helped the jubilation by playing "Yankee Doodle" in jig time. Kulick's second and third mile times were both new records for light weight cars.



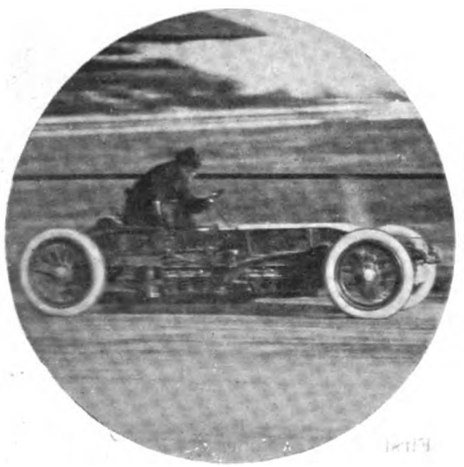
KISER'S UNSUCCESSFUL ATTACK ON RECORD.

The ten mile match race between Bernin in the Brokaw 60-horsepower Renault and Sartori in the A. G. Vanderbilt 90-horse-

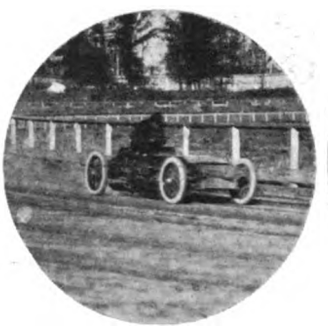
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power F. I. A. T. was a procession from the start. Bernin, on the pole, secured a length and a half the better of the start, and was never in danger from then on. Sartori had fitted smaller wheels on the F. I. A. T., as he had claimed that he could not use his fourth speed on the turns with the large wheels, but there was no startling increase of speed noticeable. Sartori himself had discarded his familiar blue "jumper" and wore a dark business suit. Bernin skidded frequently as he rounded the turn into the home stretch, but it did not seem to bother him much.

The first event on the programme was a mile price handicap with four starters. The winner turned up in a 6½ H. P. Rainey, which looked more like a small racing machine than the stock car it was supposed to be. The other contestants protested it, and the matter will be decided by the Racing Committee of the A. A. A. It had 350 yards, and won









KISER IN FLIGHT; LIKEWISE BERNIN.

by 20 2-5 seconds from an Oldsmobile. Earl Kiser made several attempts to get the Winton Bullet No. 2 going, but the best he did was 11 miles in 11 minutes 11 3-5 seconds. Frank Croker started to drive a 20-mile exhibition, but he lost a tire in the twelfth mile. He used the car with which he competed in the Vanderbilt Cup race. His time for twelve miles was 11 minutes 32 1-5 seconds. His fastest mile was the eleventh, which he covered in 56 3-5 seconds. Some good handicapping was done for the five-mile Empire Handicap, which was run off in one heat. Guy Vaughan, who had 55 seconds' start, won from Bernin, scratch, while the limit car and a 16-horsepower F. I. A. T. were close behind.

The "iron" of attendance was not as "hot" as it had been, for only 3,000 spectators witnessed the races, in contrast to the crowds of 6,000 and 10,000 that had watched the two previous meets in the last three weeks. There were about 200 automobiles inside the grounds.

Summaries:

Mount Vernon Cup (one mile; handicap according to price)—Won by A. Comacho (6½-horsepower Rainey; 350 yards); L. C. Hutcheson (4½-horsepower Oldsmobile; 350 yards), second; R. G. Howell (7-horsepower Oldsmobile; 250 yards), third. Time, 1:19 2-5.

Ten-mile match race between M. G. Bernin (W. G. Brokaw's 60-horsepower Renault) and Paul Sartori (A. G. Vanderbilt's 90-horsepower F. I. A. T.)—Won by Bernin. Time, 9:54.

International Cup (trial heats, three miles; final, five miles): First heat (American cars)—Won by Frank Kulick (20-horsepower Ford); Philip Adams (25 horsepower Standard), second. Time, 3:03 4-5. Second heat (French cars)—Walkover for M. G. Bernin (W. G. Brokaw's 60-horsepower Renault). Third heat (Italian cars)—Walkover for Paul Sartori (A. G. Vanderbilt's 90-horsepower F. I. A. T.). Final heat—Won by Kulick; Bernin, second. Time, 4:48 2-5. Kulick's time by miles, 0:59, 1:54, 2:51, 3:49 and 4:48 2-5.

Empire Handicap (five miles)—Won by Guy Vaughan (40 horsepower Decauville; 55 seconds); M. G. Bernin (W. G. Brokaw's 60-horsepower Renault; scratch), second. Time, 6:40 2-5.

Twelve-mile exhibition—Frank Croker (75-horsepower S. & M. Simplex). Time, 11:32 1-5.

Eleven mile exhibition—Earl Kiser (Winton Bullet No. 2). Time, 11:11 3-5.

Great Going Up Gaillon.

Phenomenal speed was attained by the cars competing in the racing section of the Gaillon hill-climbing contest on October 30. The event, which was the sixth annual, was held at Gaillon, a village about sixty miles from Paris, on the road to Rouen, and attracted a fine lot of both touring and racing cars. As usual, the preceding year's records were knocked sky high. Two cars tied for best performance, viz., a Gobron-Brillie and a Darracq, each climbing the hill in 29 seconds, which figures out a speed of seventy-two miles an hour.

The hill is exactly one kilometer—0.621 of a mile—long. It is perfectly straight, with a smooth, hard surface. The grade ranges from one in ten at the foot to one in fourteen nearer the top. Last year first honors were carried off by Rigolly, in a Gobron-Brillie, he ascending the hill in 33 3-5 seconds. On Sunday week he used the same car and made the ascent in exactly 29 seconds. Baras, in a Darracq, did precisely the same time, however, while MacDonald, in a six-cylinder Napier, was only two-fifths of a second behind the leaders.

Lining Up "Democratic" "Motorists."

What may be the New York Motor Club—the name has not yet been definitely selected, but it is said that no heed will be paid to the respectful protest of the New York Motorcycle Club—met again last night. It did not meet on the date originally set, because the chairman, who once owned an automobile, was too busy with other matters.

The presence of A. L. McMurtry and L. J. Halle gave the meeting a more genuine automobile complexion than the first one had, and as A. L. Pope and H. A. and Ed. Lozier "looked in" en route to the theatre and said "Hello! boys," their spirit heightened the complexion. The secretary, who apparently qualified for office because of once having owned a skiff or a sailboat, also exhibited a letter from A. B. Hilton, who, he added with a show of pride, lived on Fifth avenue. That the club really does purpose being "wide open" or "democratic"—ominous word just now—was indicated by the attendance of that conspicuous and nimble "automobilist," Mr. Jake Schreyer, who does not live on Fifth avenue, and who, when he is not doing other things, peddles programmes at the automobile meets at 10 cents per "pro."

There was a good deal of talking done, but the only action taken was the appointment of a committee of five to draft a constitution and bylaws. It is headed by a couple of "motorists" who own push-cycles and who ride in automobiles whenever they get a chance. The committee was given to understand that "democratic" ideas waived initiation fees and placed dues at $20 per year.

The six members of the committee which ran the automobile races at Sachuset Beach, Newport, R. I., on July 30 have been assessed $40 each to pay the expenses of the meet. The committeemen were: Reginald C. Vanderbilt, Hamilton Fish Webster, Clarence W. Dolan, William E. Carter, William R. Hunter and Frederick P. Garrettson.

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OLDFIELD REGAINS THE MILE

Twice Gets Inside of the Former Record—Also Sets Up Other New Figures.

Though Barney Oldfield kept the Denverites waiting for a week while he "regained his face" by winning the four cornered match at the Empire City track on October 29, he showed them some great racing against "Old Father Time" when he drove his Peerless Green Dragon in record trials on the Overland Park track on November 5 and 6. Oldfield made deep inroads in the table of world's track records, emerging with new marks to his credit up to and including twenty miles, except those for nine and ten miles. The ten-mile record he already held, having put it at 9:12 3-5 in the final heat of the four-cornered race at the Emipre City track on October 29. The nine-mile record of 8:17 is held by Charles Basle, who made it at Providence on September 10.

Undoubtedly what pleased Oldfield most was his acquisition of the coveted record for one mile. The former time was 52 4-5 seconds, made by Earl Kiser in the Winton Bullet No. 2 in the concluding mile of a five-mile contest at Cleveland on August 22. Not only did Oldfield better this with the Peerless Green Dragon, but he covered two separate miles in faster time. He secured the one-mile record on the second day during an eight-mile exhibition ride. He made one trial of five miles during which he had wiped out the old times from two miles to five, but his fastest mile had been the fourth in 53 1-5 seconds. Later in the afternoon he came out again and made his second attempt of the day. The official time showed that he had made the second mile in 52 2-5 seconds after covering the first in a second slower time. The fourth mile was the fastest, however, as it was covered in 52 1-5 seconds, as can be seen by the table giving his time by miles. John A. Payment and G. A. Maxwell, who have acted as timers at bicycle races for many years, also timed the fourth mile, and their watches both stopped at 52 2-5 seconds.

The track surface was very fast, but as it was gravel it wore his tires badly both days. His initial attempt on the first day was for the 1 and 2 mile records. His time for the first mile was 57 2-5 seconds and 57 4-5 seconds for the second. When he stopped at the end of this ride the new tires that had been put on the machine were worn through to the fabric, and it appeared as if the crowd would not see any more of Oldfield and the Green Dragon that afternoon, as there were no extra tires at the track. But Oldfield's manager went back to Denver and brought back some heavier tires.

When the heavier tires had been fitted he came out again and went for the records up to twenty miles. His green jacket and green goggles did not "hoodoo" him this time, for he bettered the two and three mile times made by Basle, his own records from eleven to fifteen miles and those from then on to twenty miles, held by Earl Kiser. One of the most remarkable things about his twenty-mile journey was the uniformity of his time by miles. His first mile in 55 seconds was the fastest, but his slowest mile after that took but 2 1-5 seconds more time.

The best race of the day was between E. W. Swanborough in a Rambler and E. Lynn Mathewson in a Queen. It was a five-mile contest for stock gasolene cars. They kept together for almost the entire distance, but the Rambler driver sent his machine to the front in the homestretch and won by a trifle less than a yard.

On the second day Oldfield made two attempts to create new records and was successful in both of them. He would have gone further each time, but the track surface literally chewed up his tires, and he went as far as he dared each time. The track had been sprinkled, so that he was not bothered by dust, and there was no wind at all to hinder him in his attempts. His first trial was for five miles. In this ride his time was as follows: 0:55, 1:49 1-5, 2:43 1-5, 3:36 2-5 and 4:30. These were all new records from two miles to five.

He put on another set of tires and came out again, and this time he made another new set of records up to and including eight miles, except that his time for five miles was a fifth of a second slower than that made in the earlier trials. When it was announced that the time of his first mile had been 53 3-5 seconds the spectators cheered him every time he passed the grandstand. His intermediate miles were timed as follows: 0:53 3-5, 0:52 2-5, 0:55, 0:52 1-5, 0:57, 0:55, 0:53 and 0:55. This time he had bettered the times for six, seven and eight miles which had been made by Basle at Providence, his time for eight miles being 7 4-5 seconds faster than Basle's.

Swanborough and Mathewson again met in a five-mile race, and the latter secured the advantage at the start. Swanborough was the better finisher, however, and won by five yards. Swanborough later drove his machine in a handicap event against a Pope-Toledo, receiving 85 seconds' start. He gained a mile by his handicap, and Carlson, with his Pope-Toledo, could not make up the ground. The most exciting race was the last one on the programme, it being a ten-mile contest for touring cars carrying four passengers. In it there were two Pope-Toledos, Barney Oldfield's Peerless and a White. The Peerless gave the two Pope-Toledos a good race for some time, but was finally distanced. The car driven by Charles Soules, of Toledo, won out by four feet.

Summaries:

FIRST DAY, NOVEMBER 5.

Five miles, touring cars, full equipment—Won by G. A. Maxwell (Peerless); C. Miller (Pope-Toledo), second. Time, 7:02.

Five-mile motor bicycle handicap—Won by K. Hamilton, scratch; A. S. Cohagan, 5 seconds, second; J. Nash, 5 seconds, third. Time, 7:18.

Five-mile handicap—Won by E. W. Swanborough (Rambler), 1:45. Time not taken.

Five miles, stock gasolene cars—Won by E. W. Swanborough (Rambler); E. Lynn Mathewson (Queen), second. Time, 7:46 1-5.

Five miles, stock cars of not more than 10-horsepower—Won by A. R. Hall (Cadillac). Time, 8:55.

SECOND DAY, NOVEMBER 6.

Five miles, stock gasolene cars of not more than 20-horsepower—Won by E. W. Swanborough (Rambler); E. Lynn Mathewson (Queen), second. Time, 7:48 1-5.

Five-mile handicap match between J. A. Carlson (Pope-Toledo), scratch, and E. W. Swanborough (Rambler), 85 seconds—Won by Swanborough. Time, 6:34 3-5.

Ten mile handicap, Oldsmobiles only—Won by George E. Hannan (scratch). Time, 10:18 2-5.

Five mile motor bicycle handicap—Won by A. E. Cohagon (30 seconds); Louis Sanford (30 seconds) second; J. Nash (30 seconds) third. Time not taken.

Ten mile handicap—Won by E. W. Swanborough (Rambler), one and one-half miles; J. A. Carlson (Pope-Toledo), scratch, second. Time, 13:04 1-5.

Five miles, stock gasolene cars of not more than 10-horsepower—Won by E. Lynn Mathewson (Queen). Time, 8:56.

Ten miles, touring cars with full equipment and carrying four passengers—Won by Charles Soules (Pope-Toledo). Time, 13:22 2-5.

OLDFIELD'S RECORD TRIALS.

First day, November 5:

Miles.	Time.	Former record.
1.	0:55	0:52 4-5
2.	*1:51 1-5	1:53 2-5
3.	*2:47	2:47 2-5
4.	3:43 2-5	3:42 2-5
5.	4:40	4:37 2-5
6.	5:36 3-5	5:32 1-5
7.	6:33 4-5	6:26 4-5
8.	7:30	7:21
9.	8:26	8:17
10.	9:22	9:12 3-5
11.	*10:18 1-5	10:29 3-4
12.	*11:15	11:27 3-4
13.	*12:12 1-5	12:25 3-4
14.	*13:09	13:23 3-4
15.	*14:05	14:21
16.	*15:01	15:20 2-5
17.	*15:57	16:17
18.	*16:53	17:14
19.	*17:49 2-5	18:11
20.	*18:45 2-5	19:08 2-5

*New world's records.

Second day, November 6:

Miles.	Time.	Former record.	Time by miles.
1.	0:53 3-5	0:52 4-5	53 3-5
2.	*1:46	1:51 1-5	52 2-5
3.	*2:41	2:47	55
4.	*3:33 1-5	3:42 2-5	**52 1-5
5.	*4:30	4:37 2-5	57
6.	*5:25 1-5	5:32 1-5	55
7.	*6:18 1-5	6:26 4-5	53
8.	*7:13 1-5	7:21	55

*New world's records. **New world's record for single mile.

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25 EVENTS AT ORMOND

Florida Carnival Will be Much Longer and More Diversified Than Ever Before.

As announced yesterday by its godfather and promoter, W. J. Morgan, the third annual Ormond Carnival, January 23-28, will be more varied and interesting than ever. There are to be twenty-five events, entries to be by invitation only. Sir Thomas R. Dewar, M. P., who gives a cup for the one-mile international record trials, will be present as one of the officials.

The races are as follows:

One hundred miles, open to all, for the Vanderbilt trophy. In case the number of starters exceeds six, the cars will be started one minute apart, and the winner determined by time instead of by position. In this case the start will be from a standstill.

One-mile record, international, open to all, for the Sir Thomas Dewar trophy. Two cars in each heat; second round of heats if necessary, winners and fastest car to compete in final.

Fifty miles, open to all American built cars. In case the number of starters exceeds six, the cars will be started one minute apart, and the winner determined by time instead of by position. In this case the start will be from a standstill.

One mile, for steam cars only.

Five miles, for steam cars only.

Ten miles, for steam cars only.

Five miles, time trials, stock cars, above $1,000 to and including $1,800.

Five miles, time trials, stock cars, above $1,800 to and including $2,750.

Five miles, time trials, stock cars, above $2,750 to and including $4,000.

Five miles, time trials, stock cars, $4,000 and over.

Five miles, time trials, racing cars of all classes.

Five miles, gasolene stock cars, $650 and under.

Five miles, stock cars, above $650 to and including $1,000.

Ten miles, stock cars, above $1,000 to and including $1,800.

Ten miles, stock cars, above $1,000 to and including $2,500.

Ten miles, stock cars, above $2,750 to and including $4,000.

Ten miles, stock cars, $4,000 and over.

Ten miles, Ormond Derby, open to all racing cars.

Five miles, handicap, stock cars only. Open only to those cars which have been entered for and have taken part in events Nos. 7 and 8.

Five miles, handicap. Open only to those cars which have been entered for and have taken part in events Nos. 9, 10 and 11.

Five miles, Great Ormond Handicap. Open only to the first five cars in events Nos. 19 and 20.

Five miles, Daytona Handicap, open to all.

Ten miles, Mercedes trophy.

Fifteen miles, open to cars of 40 horsepower or under.

Gymkhana race.

Stock cars must be equipped as catalogued, except that lamps, baskets and tops need not be carried; must carry tonneau if adapted. Foreign cars must be qualified according to American catalogues. No entry will be accepted unless catalogue is available.

In the five-mile handicap, No. 21, stock cars must be equipped as specified, and exactly as in races Nos. 19 and 20. The management reserves the right to refuse any entry for events for stock cars which, in its opinion, is not a stock car within the meaning of this rule. One trial only will be allowed in time trials. The final heats of handicaps will be rehandicapped if, in the opinion of the handicapper, any change is desirable. All events except handicaps, and those otherwise specified, will be from flying starts. Invitations and entry blanks will be ready on Nov. 13, and entries will close on Friday, January 13.

Why the Cop Stopped Homan.

Along "the row"—on Thirty-eighth street, this city—a few people "in the know" have had a quiet laugh this week over an adventure of L. J. Homan, of Homan & Schultz.

Homan was returning from the races at the Empire City track in one of the new Rambler two cylinder side entrance cars, which was being given its maiden run. In the car were Gaston Plaintiff, F. J. Wagner and a Motor World man. It was a long, dusty road, and a string of cars reached almost from the track to the city—or so it seemed. The desire to escape the dust and a wish to try the paces of the new car led Homan to depart from his usual custom of keeping strictly within the speed limit—a practice for which he is noted. He "hit it up" to such an extent that he passed not a few cars on the way, the Rambler proving itself to be a speedy, easily controlled car.

In due course the party neared the Harlem River without molestation, although several warning fingers were raised by mounted policemen. At one point an automobile and a trolley car got in Homan's way, and he had to open the throttle wide to get past them. Before he had time to slow down a policeman on foot blocked the way and raised his club menacingly. With a muttered exclamation Homan brought the car to a stop with a jerk that almost threw the occupants out of their seats.

"What's the matter?" he inquired, with considerable trepidation, while thoughts of the nearest station house coursed through the minds of Homan and his companions.

"Who won the race?" demanded the policeman. "Did Oldfield lick 'em?"

"Yes, hands down," replied Homan as soon as he could get his breath. "The foreigners weren't in it."

"Good for Barney," exclaimed the cop as he stepped back out of the road. "I knew he could do it if he tried."

And for the rest of the way Homan was too dazed to exceed the legal limit.

A. C. A. NAMES ITS SLATE

Almost a Complete Turnover—Morris for President—Takes Steps to Erect Clubhouse.

The regular ticket for officers for 1905 for the Automobile Club of America was published officially last Friday by the Board of Governors of the organization. The nominations are as follows: President, Dave H. Morris; first vice-president, Colgate Hoyt; second vice-president, W. K. Vanderbilt, jr.; third vice-president, Clarence Gray Dinsmore; treasurer, Samuel H. Valentine; governors, to serve three years, James L. Breese, Melville D. Chapman and Harlan W. Whipple. Messrs. Morris, Hoyt, Dinsmore and Valentine are new to the board of officers, though three of them have served on the board of governors. Mr. Dinsmore for several years has been the club's special representative in Europe. Mr. Vanderbilt is elevated from the third to the second vice-presidency. The annual meeting and election will take place on Monday evening, November 21. The "club night" scheduled for the following evening will be omitted. The first of the regular "club nights" will take place November 15, when George Donaldson, who has traveled extensively in Japan, will lecture on the "Yankees of the East."

In response to the complaint of the club, made to various superintendents of railroads in New York and New Jersey in regard to the failure of locomotive engineers to comply with the law requiring the ringing of a bell or blowing of a whistle on approaching a highway crossing, at grade, various communications were received from the Long Island, Erie, New York Central, Pennsylvania, Lehigh Valley, New York, Ontario and Western and other railroads, stating that the necessary instructions had been issued to their locomotive engineers.

An investigation made by the club has shown that but a very small percentage of villages in this and adjoining States have any ordinance requiring the carrying of lights by horse-drawn vehicles, and in the few cases where such ordinance was on the village books it was practically a dead letter. It is proposed to have a State law passed requiring all horse-drawn vehicles in every such town and village of the State to carry the necessary lights.

A special committee, consisting of A. R. Shattuck, Jefferson Seligman, Colonel John Jacob Astor, William K. Vanderbilt, jr., Arthur Iselin and Harlan W. Whipple has been appointed to consider the building of a suitable clubhouse and thoroughly equipped garage.

Long distance driving honors are claimed by Dr. Ryfkogel, of San Francisco, Cal. He says he has driven his automobile more than twenty thousand miles on the streets of San Francisco.

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FIRST STEP AGAINST FERRIES

Papers Finally are Filed and Law Will be Tested —What the Action Discloses.

The expected suit of the United States Government against the Brooklyn Ferry Company for carrying an automobile with its gasolene engine running materialized last Monday in the libel filed by Henry L. Burnett, United States District Attorney, against the steamer Texas, owned by the Brooklyn Ferry Company. The government's side of the question is being handled by Assistant United States Attorney Baldwin, as told in the Motor World two weeks ago, while the ferry company will be represented by Herbert Green, of Wilcox & Green, 1 Broadway, New York. In fighting the case, Mr. Green will have the aid of W. W. Niles, counsel of the Automobile Club of America, and will also be aided by an expert in gasolene engines.

The libel discloses the fact that half of the fine, in case it is assessed against the Brooklyn Ferry Company, will go to the informer in the action. Just who the informer was cannot be learned, though it is surmised that the information was lodged at the instigation of the Automobile Club of America. Mr. Green will file an answer to the libel as soon as he can draw up the papers, which he expects will be in about ten days. He will deny that there was any fire in the automobile in the meaning of the amendment, and will also deny that gasolene was carried as fuel. The machine which was the cause of the action is numbered 11,119, and was carried from the foot of East Twenty-third street, Manhattan, to the foot of Broadway, Brooklyn, on October 14 last.

The libel recites that the complaint is against the Texas and her owners, and the first three parts of the libel are devoted to the statements that the Texas is within the maritime jurisdiction of the court, was a steam ferryboat carrying passengers between the foot of East Twenty-third street, Manhattan, and the foot of Broadway, Brooklyn, and the boat was owned and operated by the Brooklyn Ferry Company, a New York corporation.

The fourth part of the libel is as follows:

"Fourth—That Section 4,472 of the Revised Statutes of the United States, as amended by act of Congress of February 27, 1877; c. 69, Sec. 1, and act of February 20, 1901, c. 386, 31 Statutes 799, is now, and was on the 14th day of October, 1904, as follows, viz:

" 'No loose hay, loose cotton or loose hemp, camphene, nitroglycerine, naphtha, benzine, benezole, coal oil, crude or refined petroleum, or other like explosive burning fluids, or like dangerous articles, shall be carried as freight or used as stores on any steamer carrying passengers; nor shall baled cotton or hemp be carried on such steamers unless the bales are compactly pressed and thoroughly covered with bagging or similar fabric, secured with good rope or iron bands; nor shall gunpowder be carried on any such vessel, except under special license; nor shall oil of vitriol, nitric or other chemical acids be carried on such steamers except on the decks or guards thereof, or in such other safe part of the vessel as shall be prescribed by the inspectors. Refined petroleum which will not ignite at a temperature less than 110 degrees of Fahrenheit thermometer may be carried on board such steamers upon routes where there is no other practical mode of transporting it, and under such regulations as shall be prescribed by the board of supervising inspectors with the approval of the Secretary of the Treasury; and oil or spirits of turpentine may be carried on such steamers when put up in good metallic vessels, or casks or barrels well and securely bound with iron and stowed in a secure part of the vessel; and friction matches may be carried on such steamers when securely packed in strong tight chests or boxes, the covers of which shall be well secured by locks, screws or other reliable fastenings, and stowed in a safe part of the vessel at a secure distance from any fire or heat. All such other provisions shall be made on every steamer carrying passengers or freight, to guard against and extinguish fire, as shall be prescribed by the board of supervising inspectors and approved by the Secretary of the Treasury. Nothing in the foregoing or following sections of this act shall prohibit the transportation by steam vessels of gasolene or any of the products of petroleum when carried by motor vehicles (commonly known as automobiles) using the same as a source of motive power;

" 'Provided, however, that all fire, if any, in such vehicles or automobiles be extinguished before entering the said vessel, and that the same be not relighted until after said vehicle shall have left the same; provided, further, that any owner, master, agent or other person having charge of passenger steam vessels shall have the right to refuse to transport automobile vehicles the tanks of which contain gasolene, naphtha or other dangerous burning fluids.' "

The fifth part recites that Section 4,499 of the Revised Statutes of the United States, as in force now and on October 14, 1904, provided that the owner of any vessel propelled by steam not complying with the above regulations shall be liable to a penalty of $500, one-half of which shall go to the informer.

The sixth part is as follows:

"Sixth—That on said day, to wit, the 14th day of October, 1904, at about 10:28 o'clock in the morning, said ferryboat, being on one of her regular trips on the East River between said ferry termini, and having passengers on board, carried as freight, across the East River, from the foot of East Twenty-third street, Borough of Manhattan, to the foot of Broadway, in the Borough of Brooklyn, New York City, a quantity of gasolene, the same being an explosive burning fluid, which fluid was contained in a tank or other receptacle attached to and forming part of a motor vehicle (commonly known as an automobile), which vehicle was No. 11,119; that said vehicle used the said gasolene as a source of motive power, and there was at said time a fire in said vehicle which was not extinguished before said vehicle entered said vessel at said East Twenty-third street and was relighted before said vehicle left said vessel at the foot of said Broadway."

The seventh part says:

"The carriage of said gasolene in the manner aforesaid was in violation of the law, and especially in violation of the terms of said section of the Revised Statutes, and the owner of said ferryboat, to wit, the said Brooklyn Ferry Co., of New York, thereby became liable to the United States in the penalty of five hundred dollars, one-half for the use of the informer who reported the said violation, and the ferryboat Texas also became liable for the said penalty and liable to be seized and proceeded against by way of libel in this court."

The libel winds up by the United States Attorney praying for the usual process against the "Texas, her boilers, engines, tackle, apparel and furniture," and that the court decree for the penalty aforesaid that the ferryboat may be condemned and sold to pay the said penalty with costs.

Sued for Damage Caused by Towed Car.

An interesting and novel legal point was raised and decided in a Long Island court last week. It involved the question of responsibility for damages caused by an automobile while being towed. The decision handed down was to the effect that the responsibility lay, not with the owner of the towed machine, but with the person or company doing the towing.

The case came before a jury in the First District Municipal Court, Long Island City, Judge Kadien presiding. A verdict was rendered for $100 damages in favor of Allen Davis in his suit for damages for the wrecking of his vehicle, which was run into by Frank Croker's racing car the day after the race for the Vanderbilt Cup.

Davis and his wife were driving in Long Island City when the accident happened. Croker's racer was being towed home by an automobile belonging to Smith & Mabey. Davis and his wife were thrown out, and Mrs. Davis, her husband says, was severely injured. Davis sued for $200.

Judge Kadien said it had not been shown that there was any one in the Croker automobile when the collision occurred, and that, as the racer was being propelled by an automobile in charge of an employe of Smith & Mabey, that firm was responsible for any damage that had been done. The jury accordingly found a verdict against the firm.

The brougham is an evolution of the Sedan chair. The principal change consisted in mounting it on wheels instead of swinging it on poles and having it carried by men. It takes its name from Lord Brougham.

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LO! THE MOTORING DEER HUNTER

How He Penetrated the Maine Woods, Emerging with Horns– the Kind that Don't Toot.

There won't be much of the wild and picturesque Maine regions left to be explored if motorists continue to plunge into its remotest recesses at the rate they are doing.



Time was when these recesses were penetrable only afoot or in homely vehicles drawn by slow footed quadrupeds. But now only a few sections are virgin of the ever-advancing railroad, while the automobile is even more ubiquitous. It traverses the State from one end to the other, leaving wonder in its wake.

One of the most recent invasions of the Pine Tree State, a la automobile, was made by George H. Lowe, of Boston, manager of the White New England branch, and E. W. Young, of New York. Accompanied by a mechanic, they drove in a White steamer to a point nearly 150 miles beyond Bangor. Being, like Nimrod of old, mighty hunters, "Pop" Lowe and his friend then proceeded to make a "bag" of game, such as would astonish their friends, in which task they succeeded even beyond their expectations.

It had been the original intention of the adventurers when they left Boston to leave the car at Bangor, but the weather was so ideal and the car worked so perfectly that they decided to continue on the next morning toward Patten, a town 130 miles from Bangor.

From Bangor to Brownville the road was found to be in good condition. North of this town, however, the backwoods roads were encountered, and as Lowe says, "the man that sat in the tonneau had rather a hard time of it keeping in his seat."

Patten was reached on Thursday, and a stop was made overnight. A guide was engaged there and plans made for the hunting trip for which the party was so eager. A camp was found on the shore of Shinn Pond, fifteen miles from Patten, and the guide informed the hunters that the place was generally reached afoot.

That fifteen miles was the longest that any of the party had ever experienced, but thanks to the assistance of several woodsmen it was made within four hours by hard toiling. Bridges had to be built, fallen logs had to be removed, wide detours had to be made to avoid boulders and all sorts of obstructions in the path.



Once in the camp the steamer was left under cover to rest for a week, while the party took to the woods in search of big game. All met with success; each got his full quota of deer, but Lowe was the only one fortunate enough to bring down a moose. The moose weighed 900 pounds and had a fine spread of antlers. The head was sent to Bangor to be mounted.

At Patten the party shipped the deer by train, but came back themsIves in the touring car.

WHEN THE MOTOR GAINS POWER

The Remarkable Effect After Sunset and Some of the Things it Suggests.

"Why is a more powerful mixture obtained in the evening than at midday?" asks an experienced motorist. "There can be no question about it at all; it is the mixture. Other conditions being equal, the explosions become more powerful after sunset. One may lag at noonday and race at twilight. Often toward evening, generally after sunset, your engine seems to want to spring away from you. You may cut down the gas and retard the spark, but still it leaps away like a thing possessed, and there seems no holding it back.

"'Oh, your cylinder is cooler!' is generally the loose and very false explanation. Upon the face of it that is an unstable theory. Why does it not behave in the same flyaway manner on a cool or cold day in the daytime? If change of temperature was the secret, why does the same thing happen on a winter's evening when there has been no appreciable fall in temperature? In many ways I have convinced myself over and over again that it is not due to change of temperature, but to atmospheric conditions.

"Will some one define exactly what takes place? If the air is more oxygenated, why does not the artificial introduction of oxygen have the same effect? I once saw an enthusiastic friend with a small cylinder of compressed oxygen making the experiment, but without any satisfactory result. The change I chronicle is so marked that it is a wonder more study has not been made of the reason.

"If we knew exactly what took place naturally, why could we not supply the same conditions artificially, thereby getting so much more power out of the same quantity of gasolene?

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COURT READS "RIOT ACT"

Chicago Violates Farson Injunction and Reaps a Whirlwind—Tag System Condemned.

Quite the most sensational utterances yet delivered from the bench, and directly attacking the entire system of numbering automobiles, emanated from Judge Hanecy, of Chicago, last week. As has so often been the case, Judge Hanecy's fulminations were called forth by the action of John Farson, that sturdy upholder of the rights of citizens who happen to be also motorists.

It will be recalled that Farson obtained from Judge Hanecy an injunction restraining the Park Boards from interfering with the running of his automobile, owing to its being unnumbered. That injunction was observed as far as Farson was concerned, but one day the latter's chauffer was caught alone and arrested, it being claimed that the injunction applied only to Farson. The chauffeur, Bangs by name, was taken before Justice Prindiville and fined $5 and costs. Farson's lawyers declared that the fine would never be paid, and at once sought for and obtained a temporary writ of habeas corpus from Judge Hanecy, upon which Bangs was released on his own recognition.

In granting the writ, Judge Hanecy arraigned in unmeasured terms "high officials" of the ctiy for their action in disregarding the injunction and arresting Bangs.

"There isn't any wonder that there are violations of the law by automobilists and other citizens when the lawyers, city officials and employes, police and justices of the peace set the law at defiance and put themselves above the law," the court declared in his decision. "This defiance of the law runs all through the fabric of the government, it seems. It must stop. It will stop some day, and in a way that will shake some of the higher officials as they have never been shaken before.

"The endangering of lives and property by automobilists is the underlying principle in the city ordinances," the court declared. "But because they do become dangerous it is no reason why the decision of the Supreme Court should be violated. Then, in every one of the labor strikes, where there is far more damage done and more danger to the lives and limbs of citizens, often causing the destruction of life, why shouldn't the common council pass an ordinance that every man that belongs to a labor union should be tagged, so that whenever any violence or damage is committed the police could capture him?

"Then the police might have no more to do than to stand on some street corner and look at events with a long glass until they see a man with a number violating the law and then they could go over and arrest him. The comparison is not overdrawn. The principle is the same."

Referring to the return of the city in the habeas corpus proceedings, in which Assistant Prosecuting Attorney George Kriete contended that the justice had acted under the theory that the injunction obtained by Farson did not apply to his chauffeur, Judge Hanecy replied:

"According to you, then, every justice of the peace and every police officer could review the actions of the Superior or Circuit Court and interpret an injunction as they are pleased to. If you contend that an injunction is not effective unless it covers not only the man who got it, but all his employes and operating apparatus (and if it does not, then some justice of the peace or police officer could say, 'We'll review it and decide what it may cover'), then law couldn't exist very long or society couldn't exist very long if that were the case.

"It isn't very strange that one justice of the peace should think that he has the right to review a case when the newspapers and so many others are doing it every day. It makes no difference whether an injunction is properly sued or not, it must be obeyed in any circumstances. The only remedy is to have it dissolved by due process of law."

Judge Hanecy then referred to the Supreme Court decision in which the final tribunal of the State held that no municipality has the right to tag or number any private vehicle.

The city's counsel, who did not have much opportunity to defend the city's position in the arguments, himself received a reprimand from the court when he inadvertantly referred to the Appellate Court decision given in the Banker injunction case and stated that Banker had "procured" the decision.

"No, he did not procure the decision, nor did any one else procure the decision. It was a decision given by the judges of the Appellate Court from a careful review of the case. I cannot permit such language in my court, nor can I permit you as a lawyer and sworn to respect the Appellate Court to speak in that way."

Scarritt Inaugurates New York's "School."

President Scarritt of the Automobile Club of America delivered the opening address at the formal opening of the automobile school of the West Side Y. M. C. A., New York, on November 9. The class numbers 136 students, some of whom are owners of cars who wish to know more about how to care for them. Mr. Scarritt advised his hearers to master their machines, to be prepared to stop instantly at all times, and to show care and consideration for other users of the highways.

Other addresses on the work of the school were delivered by William M. Kingsley, chairman of the committee of management; Walter L. Hervey, Ph. D., and H. S. Colburu, educational director. The operative classes are filled up, and it will be impossible to add to the number for this term of three months. Work in the operative class has been started under the direction of Clarence Bowne Brokaw. The first of the regular illustrated lectures will be given next Wednesday night by C. E. Lucke, Ph. D., director of experimental engineering at Columbia University.

FOR GLIDDEN TROPHY

Deed of Gift Defines Conditions - First Three Contests Must be Held in America.

At the meeting of the Board of Directors of the American Automobile Association, held on November 3 at the clubhouse of the Automobile Club of America, the deed of gift for the Charles J. Glidden Touring Trophy was formally signed by the donor and accepted by President Whipple and the directors of the A. A. A. The conditions provide for a tour of at least one thousand miles of not less than five hundred a week over the regular highways of the country, where the trophy is held. The contest must be held in the United States or Canada or both countries during 1905, 1906 and 1907. One stipulation is that cars must be driven by the owner or a driver approved by the committee when the owner must be a passenger.

The deed of gift is as follows:

First—The trophy shall be known as the Charles J. Glidden Touring Trophy.

Second—The cup shall be competed for annually, beginning with the year 1905, by members of any American automobile club affiliated with the American Automobile Association who have been members of such club for at least one year, or of any club in the world recognized by it of which such contestant shall have been a member at least one year. The club of which the winner is a member shall have the custody of the trophy until it is won by another, and shall give to the American Automobile Association or its successor satisfactory bond, with sureties, in the sum of three thousand ($3,000) dollars for such custody.

Third—The distance to be driven in competition shall not be more than one thousand miles nor less than five hundred miles weekly, and shall be over regularly used highways in the country where the holding club is located, except in the years 1905, 1906 and 1907, when the contest shall be held in either the United States or Canada, or both.

Fourth—Each entry must be accompanied by a fee of not less than $100 for each member entered. Of the entry fee 50 per cent shall be refunded upon starting. In event of failure to start the entire fee shall be forfeited to the holding club.

Fifth—The car shall be driven by the owner or a driver approved by the committee, the owner being a passenger in the car.

Sixth—All other rules governing the contest shall be fixed by a committee of seven, consisting of the president of the American Automobile Association, who shall be chairman; the donor, and the presidents of the Automobile Club of America, of Great Britain and Ireland, of France, of Germany and the president of an automobile club in Canada, to be recognized by the American Automobile Association, or representatives selected by the above-named persons. The chairman and two members of the committee shall constitute a quorum.

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ORIENTS

FOR 1905.

An attractive line of Cars ranging from $425 to $2,000.

WE are pleased to announce that in addition to our Buckboard line we shall offer for the coming season an excellent four cylinder air-cooled touring car, with side entrance tonneau and thoroughly up-to-date construction, to list at $2,000. Also an attractive Car of latest construction, listing at $1,500. It is our intention that our ORIENT line for 1905 shall be second to none, and comprise one of the most attractive agency propositions on the market. We invite correspondence and shall be pleased to furnish photographs and full information to those who desire to consider our agency.

WALTHAM MFG. CO., Waltham, Mass.

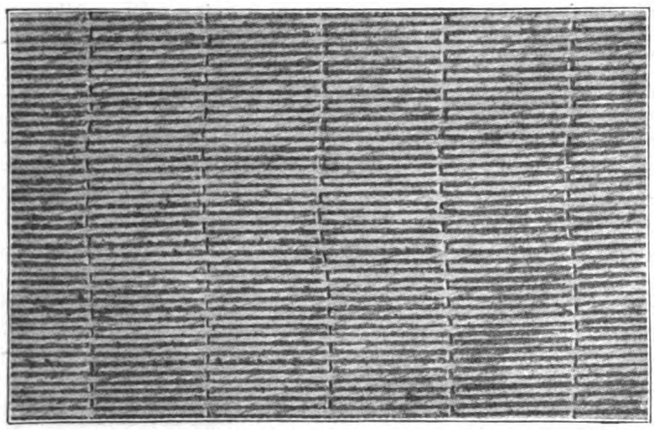
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HOW THE G & J IS MADE

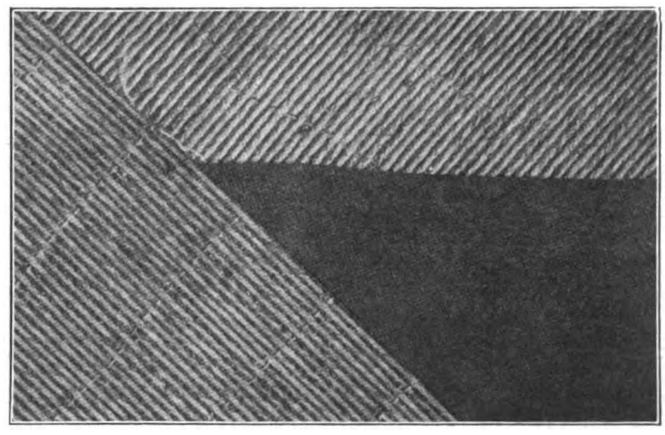
The Thread Fabric and Its Treatment and the Relation of Fabric to Durability Explained.

It is not often that an article "catches on" so quickly or so speedily leaps into fame as the G & J thread fabric tire. It is scarcely three months ago that it made its first appearance at the Detroit race meet. It won on that occasion, and it is not inapt to say that it has been winning ever since.

Every man who ever rode a bicycle knows the part that the thread tire played and plays in the performance of that vehicle, and it is not strange therefore that a resilient, responsive tire of a similar type should prove so effective on the self-propelled car. That it is really posible for a tire to "make a slow car fast and a fast car faster," as has been claimed for the new G & J tire, is rendered easy of belief by the performances of Oldfield, Lyttle and Kulick since they have made use of it.



The thread fabric after being frictioned on one side. Note the beads of rubber that have been forced between the threads.



Showing the way the strong threads cross each other, with rubber between the layers.

It is, of course, fairly well known that G & J tires always have been moulded in circular shape, thus placing the least possible strain upon the fabric used in the side walls, but the exact nature of the new thread fabric and the method of treating it and forming it into a complete tire is little understood. In response to the Motor World's request, President H. O. Smith has made this plain.

"Until we used threads," he says, "the fabric used in the construction of automobile tires was a close, square woven cloth, the term 'square woven' being used to describe the special weave—the feature of the cloth being that the filling threads were the same number, size and strength as the warp threads. Thus the cloth was as strong one way as the other, hence the term 'square woven.'

"The effective strength of the fabric entering into the construction of a tire does not depend entirely upon its tensile strength, but in a large degree upon the method used in construction, which determines whether or not the entire strength of the fabric has been used to the best possible advantage. This should be reckoned on the basis of the work performed by each separate thread used in the construction of the tire.

"In the thread tire, as made by us, the fabric is so placed and controlled that each and every thread is used to the best possible advantage; while in a tire made of square woven cloth it is impossible to place each separate thread in the proper position to accomplish the best results, owing to the fact that the threads in such fabric cross and recross each other, one over and one under the other. In the necessary operations in the factory to prepare the square woven cloth for the actual making of the tire, one set of threads is drawn to the utmost tension, while the others, or cross threads, are left in their normal condition. Thus, when a tire constructed with square woven cloth is inflated and the individual threads are put to the greatest tension, the natural tendency is for the threads to form as near a straight line as possible, and in consequence great pressure is exerted at point of contact where the threads cross each other. When the bias fabric changes its position, as it must when the tire is in service, and sets up a chafing action between the fill and cross threads, the result is that the individual threads of the tire are destroyed, not by pressure, but by the chafing action of one thread against the other, which action is continuous while the tire is in service. Not only does this chafing action affect the threads of the tire, but it also generates an internal frictional heat. Constantly subjecting rubber and fabric to heat has a deteriorating effect on the tire.

"A tire made of square woven cloth is subject to damage by any moisture which can get to the cloth by reason of a cut in the outer rubber cover, or otherwise, and as each thread in each layer of the cloth comes in contact with the other, the whole of that layer may be affected by the moisture, as the capillary attraction will allow the wet or moisture to travel the entire length of the cloth, while in the thread tire the moisture would affect only the few individual threads in direct contact with the cut, for the reason that the threads in this tire do not touch each other—an important point in considering the life of a tire.

"Each layer of cloth is rubbered, or frictioned before being put into the tire. This consists of a rubber surface on the cloth, and the rubber is pressed into the meshes of the cloth, forming, as it were, a small individual rubber rivet. When the different layers of fabric are built up in a tire, the greater part of the adhesion is reckoned on a basis of the strength of the rubber rivets referred to. These rivets are formed in the shape of the mesh of the cloth at the time it is vulcanized or cured, which is done by heat under pressure. With the cloth cut on a bias, and the tire changing in shape as it does in service, the shape of the mesh itself changes, having a tendency to destroy the adhesion of the rubber to the fabric, and at the same time the fabric changing position has a tendency to destroy or break the rubber rivet. The action is really an opening and closing one, which not only cuts off the rivet, but injures the fabric at the same time, and when once these rivets begin to get loose the adhesive power is lessened and the layers of fabric, or as it may be, the outside cover, begins to let loose. This action materially assists the chafing action, already described, to set up a frictional action, which is indicated by the internal heat of the tire.

"With the threads which we use in making our 1905 G & J tires, the fabric consists of a number of parallel threads of great strength. The uniform tension of the individual threads is assured by the fact that we have an absolute check on each thread, which is an essential point, and it is also important that these threads should be so laid that they cross each other at the proper angle, and by the methods pursued we have been able to accomplish this result. If the threads were under irregular tension, those on the greatest tension would have a tendency to exert an undue pressure on the threads which they cross at right angles, and probably result in

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the destroying of the threads. Each thread is imbedded in a cell of rubber, forming a perfect insulation, and there is a layer of rubber between the different layers of threads, preventing the threads from coming in contact in crossing each other.

"By this method of construction, each thread while acting under the same conditions and in harmony with the other threads, operates separately, preventing the heating already referred to, which is common in tires made of square woven cloth. In the thread tire there is one continuous rubber bead running the entire length of the tire between each thread, which insures a perfect union between the different layers of threads as well as an ideal union with the rubber cover itself, which allows the tire to be vulcanized or cured in what can properly be termed one solid, homogeneous mass, with merely the threads laid in the rubber. Those threads are very pliable, and allow the tire to change position in service with the slightest possible resistance, which means, as has been proven by extensive experience, that the tires are very pliable, fast and free from internal heating.

"It has also been proven that a tire of the thread fabric construction will last much longer than a tire made of square woven fabric, as with the threads there is not the self-destroying tendency that exists with the square woven cloth tire, and in consequence the thread tires will literally wear out in road service rather than have their usefulness ended by self-destruction. Any tire that can stand the use and abuse of a racing car will stand anything."

Baskets for Automobiles.

Making baskets for automobiles is almost a special trade of itself. It requires peculiar skill, because it is hard to fashion the curves so as to fit snugly in the sinuosities of the motor cars.

Polish basket weavers, who learned and long practised their trade in Europe, seem to have special aptitude for this particular kind of basket work. The materials that go into the baskets are reeds, whole or split; whitewood, cylindrical bits of birch, leather, brass for the hinges and rubber oil cloth for the waterproof lining. A basket once well made and coated with shellac, will last almost forever, barring accidents, and will ordinarily need no repairs beyond a new coat of shellac at the end of the season.

Most of the material that goes into these baskets is of native production, though some of the reed comes from the Orient and some from the West Indies.

Acetylene lamps are sometimes not hung properly on the brackets. The latter may be inclined forward from the vertical, causing the light to strike the road close to the car and showing very little light ahead, or they may be inclined backward, causing the light to shine upward, and leaving the road close to the car in comparative darkness. The remedy in both cases is obvious.

PALMER'S NEW TIRE

Veteran Rubber Man Produces a Mechanically-Attached Article of Much Interest.

H. A. Palmer, Erie, Pa., who has spent many years in the rubber trade, and who has been identified with at least two tire factories of prominence, is the inventor of the mechanically attached tire shown by the



accompanying illustrations, which display the fastening and general principles of the tire to advantage.

It is Mr. Palmer's claim that the inner tube is easily removed in two minutes, and that it can be replaced and made ready for



inflation in the same length of time without special effort. All that is necessary to remove is the felloe bolt nuts, when the outer flange, which is bolted to the edge of the tire with large head bolts, can easily be withdrawn from the felloe far enough to readily remove or replace the inner tube. The small bolts that fasten the tire to the flanges are never removed unless it becomes necessary to change or repair the casing. In that event it is a simple matter to strip the wheel, leaving a solid plain wagon wheel, which may be used as such in emergency.

The tire being mechanically fastened (with inextensible edges), it cannot creep or roll off the rim, whether inflated or deflated. The air chamber is smooth and nearly round, thus admitting of a natural and favorable condition for the inner tube, which may be provided with either a rubber or metal valve stem.

Rim cutting is entirely eliminated, as the gently flaring flanges curve outwardly, giving the casing a smooth surface to roll on either when inflated or deflated. Several important tests have proven favorable on every point.

Carriage Makers Express Opinions.

Two widely differing views were given expression at the recent convention of carriage makers at Milwaukee, Wis., regarding the effect on the carriage trade of automobile sales. Which was the more sincere, as well as the more accurate, is scarcely open to question.

"The automobile craze has not hurt the carriage manufacturing business in the least," J. H. Baker, of Newark, N. J., is quoted as saying, "and it will never hurt it. There are more carriages being manufactured today than ever before, and more will be built next year. I know of one firm in Evansville, Ind., that turned out thirty thousand 'jobs' last year and cleaned up every one of them. The automobile is a fad, the same as the bicycle and roller skates. The prices may get down to $200 sometime, when many people can afford them, but that will never interfere with the carriage business. People who like to drive horses are never going to give them up for automobiles. I wouldn't give my team of horses for all the automobiles in the country."

"Eastern manufacturers of high grade carriages are beginning to fear the growth of the use of automobiles," said A. O. S. Allan, of Cleveland. "I have not heard that any figures have been made showing injury to the carriage trade as yet, but the automobile seems to have come to stay, and wealthy people who are riding in them used to ride in stanhopes, landaus, surreys, traps and victorias. Nearly all vehicles of this class are made in Massachusetts and New York.

"Manufacturers of buggies, costing from $20 to $175, will not be affected soon by the introduction of the automobile. Most of the enormous output of buggies is bought by farmers. Every farmer must have one, and every young countryman must have one as soon as he is big enough to take a girl to meeting."

An Ingenious Gasolene Gauge.

A useful article that has appeared "on the other side" is a gasolene gauge, which is soldered flush on the top of the tank. The cork inside the tank, floating on the surface of the spirit, turns an indicator in the little dial, which tells at a glance what amount remains within.

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Winter Care of Cars.

The motor house should be dry, well lighted, ventilated, and, if possible, kept at an even temperature of about 60 degrees.

Should it be damp, metal work will rust, woodwork swell, paint and varnish be destroyed, interior upholstery be spoiled, stitches in leather work will rot, leather surfaces will lose their brilliancy, cloth and carpets will fade, and moth will be attracted when the weather becomes warmer.

Should the house not be well lighted, paint and varnish will suffer, black panels will become green, white panels will turn "biscuit," primrose become orange, blues, especially light blues, will fade badly.

The following precautions should be adopted when it may be difficult, if not impossible, to heat the motor house in winter.

Remove all cushions, loose carpets, etc., from the interior, and place them separately in shelves, preferably indoors, if room can be found for them; thoroughly clean the car throughout, treating all coach builder's work exactly as a carriage, carefully sponging all panels and drying with a chamois leather.

Wash the car once a fortnight, employing an experienced man for the work. He must use clean, cold water only, and dry the car carefully with a chamois leather. Tepid, not warm, water may be used if there should be any "bloom" on the panels. Should the temperature be freezing, washing should be postponed.

Carefully remove all dust from the interior upholstery with a very soft brush, and use a duster (preferably a soft piece of cloth the same color) to rub the leather parts; clean and polish all plated parts, and afterward rub them over lightly with a clean oiled rag.

Apply lightly a little unsalted tallow to locks and dovetails of doors, also to the siding rods of the dust screen.

An excellent method of preserving the leather upholstery of a car is to apply a coat of leather dressing. This tends to keep mildew away. It is, however, necessary to give the car a frequent airing, which is the best preventive of mildew.

Novice of the Right Sort.

What can be done by a novice who possesses intelligence and is willing to devote a reasonable amount of time to the study of his automobile in order that he may not be entirely helpless when any little thing goes wrong, is shown by the experience of Burke Vancil, a Springfield, Ill., man.

"The biggest bill for repairs was for 40 cents, and they were necessary, because of my own carelessness," said Mr. Vancil, in enforcing his argument that a car properly cared for and understood will run for months without break or failure.

"I have had three punctures," he continued. "I bought my machine June 1, and have taken care of it personally. I learned its mechanism thoroughly, for I considered that the easiest and quickest way to save money. When I bought it I understood I was buying trouble, for 75 per cent of the owners of machines do have endless trouble and expense.

"I have been very agreeably surprised at the result. In these five months I have travelled at least three thousand miles. Since the 10th of August I have gone nine hundred miles, and during two weeks of this time the machine was in the shed. I have never scared a horse or had an accident."

Even the Minstrels Succumb.

A long string of automobiles filled with the members of a minstrel company now performing in this city attracted a great deal of attention in lower New York City one day last week. The bones and tambourine experts were on parade, and that they made use of the motor vehicle is a pointed commentary on the ever-growing popularity of the most modern of conveyances.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—1904 White Touring Car with top, gas lamps and side baskets. Car guaranteed first class shape; $1450.00. Reason for selling—buying 1905 Model "White." Address T. W. J. SUITE, 28 Manhattan Blk., Cleveland, Ohio.

FOR SALE—1904 Oldsmobile runabout, nearly new, very cheap, want larger car. K. F. PUTNAM, Mount Carmel, Ill.

FOR SALE—Late pattern, Model L, 1904 16-h. p. Rambler touring car, in excellent condition; good bargain. Want larger car next season. WM. E. STEELE, Cory, Pa.

WE have discontinued the Franklin agency, and have one brand new Franklin tonneau, car finished in dark blue. Price, $1400.00. FISHER AUTOMOBILE CO., 330 N. Illinois Street, Indianapolis, Ind.

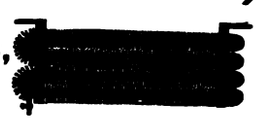
FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

1 14-H. P. "Pope-Toledo" with canopy top, baskets, in good order, - - - $1000
1 24 H. P. "Pope-Toledo" with top, baskets, revarnished, guaranteed in perfect order, - - - - - - $1800
1 10-H.P. Pope-Hartford, practically new - $750

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for 1904, constitute the most noteworthy tire occurrence of the season.

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The Week's Patents.

12,281. Electric motor. Albert B. Holson, Chicago, Ill., assigner, by mesne assignments, to the Holson Motor Patents Company, Limited, Grand Rapids, Mich. Filed May 31, 1904. Serial No. 210,583. Original No. 701,341, dated June 3, 1902.

Claim.—1. In a motor, a rotary member, provided with an annular duplex rack, a shaft arranged within said rotary member and carrying pinions fixed upon its ends and engaging with said rack at opposite sides thereof, all substantially as described.

773,565.—Speed Indicating Attachment for Vehicles. Otto F. Hakes, Dunkirk, N. Y. Filed August 1, 1903. Serial No. 167,888. (No model.)

Claim—1. A speed indicator embodying a rotatable casing having a sight opening, and an internal concentric rotatable member visible through the sight opening and capable of being rotatably shifted with respect to the casing, when the rotation reaches a predetermined rate to expose a predetermined portion of the inner member at the sight opening of the casing.

773,575.—Automobile. Alvaro S. Kretz, Springfield, Ohio, assignor of one-half to Paul A. Staley, Springfield, Ohio. Filed February 21, 1903. Serial No. 144,544. (No model.)

Claim—1. The combination of a driving axle and driving wheels, one of said wheels being rigidly connected and the other journaled to said driving axle, a differential adjacent to said journaled driving wheel, a part of which is directly connected thereto, and body supporting corner bearings rigidly connected together, a motor adjacent to said differential and rigidly connected to said corner bearings, body supporting springs rigidly connected to said corner bearings, and a cross spring, whereby the motor is held in a normal working position, substantially as and for the purpose specified.

773,588.—Pneumatic Tire. Charles H. Pierce, Alma, Cal. Filed June 3, 1903. Serial No. 159,968. (No model.)

Claim—The combination with the rim of a vehicle wheel and a pneumatic tire seated therein, of a non-resilient imperforate endless hoop of thick material having an inner groove extending longitudinally of the full length thereof and forming oppositely reduced embracing side portions, the said grooves being of less depth than one-half the diameter of the pneumatic tire and provided with transversely extending corrugations at regular intervals throughout the length thereof and terminating at the edges of the reduced side portions of said hoop, the corrugations preventing the pneumatic tire from slipping longitudinally in the hoop.

773,633.—Solid Elastic Tires with Fastening Strips. Henry G. Fiske, New York, N. Y., assignor, by mesne assignments, to Morton Trust Company, trustee, a Corporation of New-York. Filed July 1, 1899. Serial No. 722,525. (No model.)

Claim—1. The combination in a wheel, of a tire comprising a body of elastic material circumferentially substantially inexpansible on its base, fabric permanently embodied therein with layers thereof lining the seat of the tire body, a tread portion substantially parallel with base, said tire body being of greater width than thickness, lateral depending flaps composed completely of fabric with all other portions of said fabric permanently vulcanized with the tire body, a felly proper, a band encircling said felly and forming a seat for said tire, lateral plates co-operating with said felly and with said lateral flaps co-operating to clamp said tire, said lateral plates bearing upon said felly on one edge and extending upwardly and outwardly forming a contracted opening whereby said tire proper is laterally secured and a seat portion with tapered sides is afforded for retaining said tire body proper, substantially as and for the purpose described.

773,639.—Vehicle Frame. Norman T. Harrington, Detroit, Mich., assignor to Olds Motor Works, Detroit, Mich., a Corporation of Michigan. Filed July 30, 1904. Serial No. 218,823. (No model.)

Claim—1. A spring vehicle frame comprising a rigid frame, a pair of spring arms secured to said rigid frame intermediate its ends and projecting downward and outward, a cross spring interposed between the ends of said spring arms and said rigid frame, and connections between said cross spring and said rigid frame and spring arms respectively, permitting of a lateral swinging when the springs are flexed.

773,685.—Storage Battery Electrode and Process of Making Same. Elmer A. Sperry, Cleveland, Ohio. Filed January 28, 1904. Serial No. 191,053. (No model.)

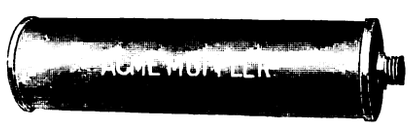
Claim—1. The process of producing storage battery electrodes, which consists in precipitating a carbonate of lead from a solution of a lead salt, roasting said carbonate to expel the carbon dioxid and produce a highly porous oxid or oxids of lead, and applying said oxid or oxids to a grid or support, as set forth.

773,686.—Storage Battery. Elmer A. Sperry, Cleveland, Ohio. Filed February 11, 1904. Serial No. 193,158. (No model.)

Claim—1. A battery, comprising a vessel, electrodes each having a support lug at one side of said vessel, and a support for said lugs independent of said vessel, as set forth.

773,771.—Vehicle Wheel. Henry W. Adams, Jr., Chicago, Ill., assignor to Scovill Manufacturing Company, Waterbury, Conn.,

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Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

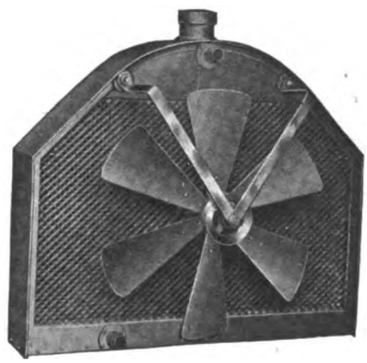
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a Corporation of Connecticut. Filed March 16, 1904. Serial No. 198,386. (No model.)

Claim—1. A vehicle wheel comprising a suitable felly, a pneumatic tire supported on said felly, a clamping bolt holding the tire in place and extending through the felly, said bolt having relatively large and small diameters, a clamping nut screwed upon the larger diameter of the bolt, and a lock nut screwed upon the smaller diameter of the bolt and bearing against the clamping nut, said lock nut being closed at its outer end and its length being greater than the length of the said smaller diameter of the bolt, and said lock nut being also provided with relatively large and small internal diameters, the relatively small internal diameter being threaded, and the relatively large internal diameter being unthreaded and adapted to extend more or less over the large diameter of the bolt, according to the thickness of the felly, substantially as shown and described.



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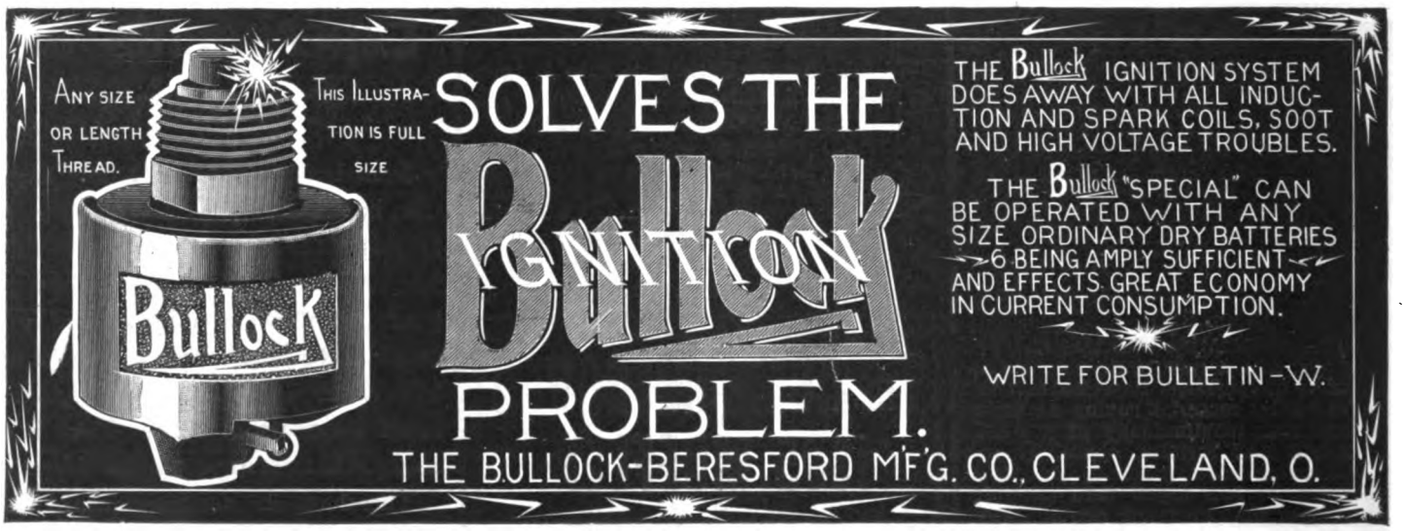
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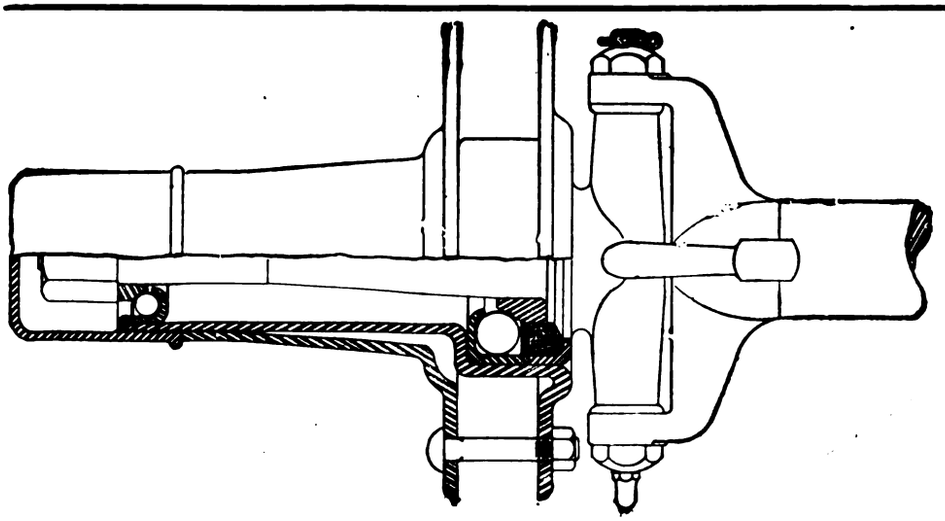
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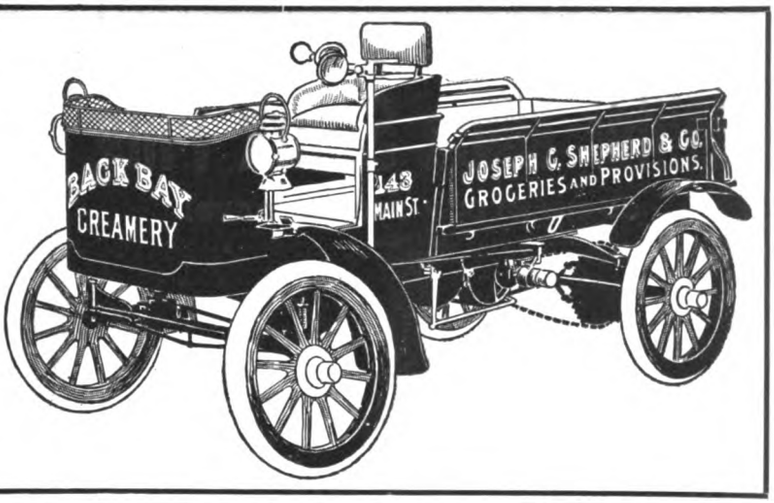
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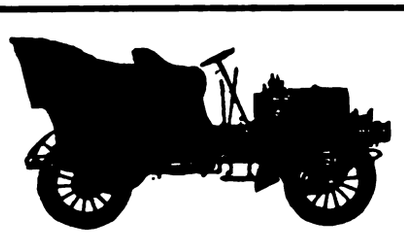
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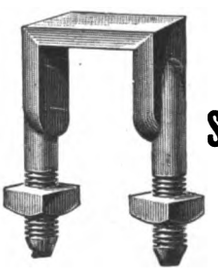
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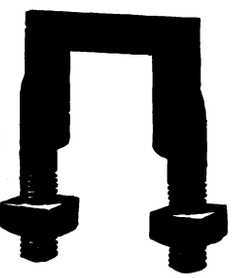
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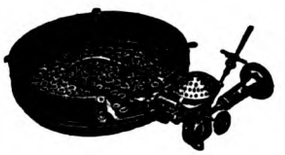
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TRADE GRADOMETER MARK

An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
THE ADAMS COMPANY, Dubuque, Iowa.



The FORG GASOLENE BURNER.

Best and Most Effective Burner Manufactured.

PETER FORG, Somerville, Mass.
CHAS. E. MILLER, Agent, New York.



THE R. E. HARDY CO., Formerly Detroit Motor Works, Inc., 1900. } 156 Jefferson Ave. Detroit, Mich.
P. J. DASEY, 435 Wabash Ave., Chicago

STA-RITE
"STAYS RIGHT THE LONGEST"

Is the most satisfactory ignition plug in the world at any price. More sold than all other advertised American made plugs combined. 18 sizes. Olds, Ford, Rambler, Northern, Queen, Peerless, Packard, Orient, Panhard etc., $1.50 Winton, Autocar, Thomas, Locomobile, Knox etc., $1.75 Mica plugs $2.00- Cadillac size plug $3.00. New No. 17 size $5.00. Best porcelain obtainable used. Get a set right away. Send for complete catalogue and discounts. Dynamos, Coils, Meters, etc.

You Will Not Miss it by Adopting Our Bevel Gear Drive Rear Axle or Our Transmission Gear.

ASK US ABOUT THEM.

THE CASE MANUFACTURING CO., Columbus, Ohio.
We Also Do Special Machine Work.

STANDARD AUTOMOBILE PARTS

Pressed steel frames, pressed steel hubs, malleable hubs, brakes, steering gear, chains, transmission gears, engine cranks, mufflers, front axles (tubular and forged), rear axles (chain and bevel gear drive), electric truck parts.

FEDERAL MANUFACTURING COMPANY, ELYRIA, OHIO.
Selling Agent—Hayden Eames, American Trust Building, Cleveland

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Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

Send for Catalog

AUTOMOBILE EQUIPMENT COMPANY
251 Jefferson Street, Detroit, Mich.

Autolyte Lamps, Imported Horns.

A. H. FUNKE,
83 Chambers St., N. Y.

QUINBY
AUTOMOBILE-BODY
DEPARTMENT
EMERSON BROOKS, Manager.
1534 Broadway, cor. of 45th St., New York.
Telephone, 6536-38th St.

TOURING CAR

THE F. B. STEARNS CO.,
CLEVELAND, OHIO, U. S. A.

Big Four Route TO St. Louis

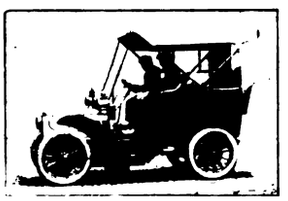
"The Way of the World" to the World's Fair

For information as to rates, hotels and boarding houses, address nearest Big Four Agent, or

WARREN J. LYNCH,
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Kerosene Burners.

JOHN SIMMONS CO.,
104-110 Centre St., New York.



Springfield Top
PATENTS PENDING.
Aluminum Bodies
Aluminum Fenders
Aluminum Hoods.

Springfield Metal Body Co.,
7 Cypress St.,
Springfield, Mass.

HOMES IN THE SOUTH.

There are in the Southern States awaiting development thousands of acres of uncultivated farm lands in tracts of all sizes, which can be purchased very cheaply. They are productive, healthy, and close to good markets. In ten States reached by the lines of the

SOUTHERN RAILWAY.

For information about opportunities now available, prices of and, character of soils, etc., write to

M. V. RICHARDS, Land and Industrial Agents,
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BALDWIN CHAINS AND SPROCKETS

The Baldwin Chain Company
— MAKE —
Automobile Chains, Sprockets, Spur and Bevel Gears.
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THE HILL PRECISION OILER

Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
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CRESTMOBILE

$800 for two persons, and $900 for four persons

The standard low priced air-cooled car.

THE CREST MFG. COMPANY,
Cambridge, Mass., U. S. A

STEEL STAMPINGS.

It's rather a bold statement to say no one can make stampings like ours—it's never-the-less true. Try us.

THE PARISH & BINGHAM CO.,
Mfrs. of the Indestructible P. & B. Wheel,
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THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

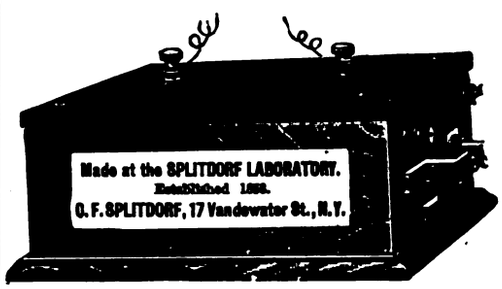
Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,
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HIGH-GRADE LAMPS

Acetylene Gas and Oil

ATWOOD MFG. CO.,
Amesbury, Mass.

DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 33 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept olean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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Your
SPECIFICATIONS
for
FORGINGS
should reach us promptly to insure
Seasonable Deliveries.

ARE YOU READY?
WE ARE.

THE BILLINGS & SPENCER CO., Hartford, Conn., U. S. A.
Makers of
Drop Forgings of Every Description.

IF THE RIM

LESSONS OF 1904

are taken to heart

"SWEDOH" Spring Steel Rims

are likely to be the general equipment of all good machines in 1905.

"SWEDOH" SPRING STEEL RIMS have conclusively demonstrated their superiority by the severest tests in actual service, giving results unattainable with rims made of ordinary stock.
"SWEDOH" SPRING STEEL RIMS are made true and stay true.
True as "SWEDOH" steel is axiomatic.

THE AMERICAN TUBE & STAMPING CO.,
Bridgeport, Conn.

We own and operate our steel billet-making and hot and cold rolling mill's and stamping works.

FIRE PROOF

Hotel Lenox

Boylston and Exeter Streets
Back Bay, BOSTON

ONE OF THE FINEST MODERN FIRE PROOF HOTELS IN THE COUNTRY. TWO MINUTES' WALK FROM THE BACK BAY STATIONS, AND ONE BLOCK FROM COPLEY SQUARE

CHARLES A. GLEASON, *Manager*
Send for illustrated booklet

THE ONLY WAY

to build automobiles that will stand the test is to use sheet metal parts in place of castings.

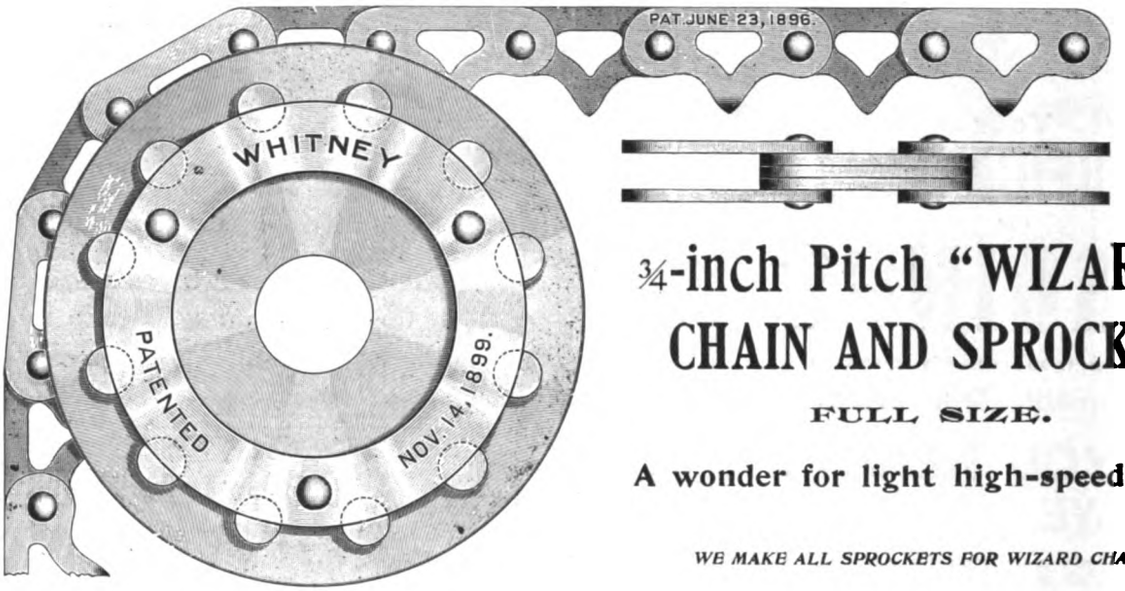
WE DO HEAVY AND DIFFICULT STAMPING.

The Crosby Co.,

BUFFALO, N. Y.

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WHITNEY CHAINS.



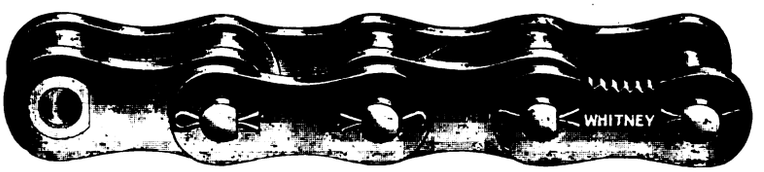
¾-inch Pitch "WIZARD" CHAIN AND SPROCKET.

FULL SIZE.

A wonder for light high-speed work.

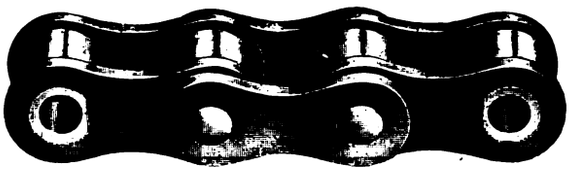
WE MAKE ALL SPROCKETS FOR WIZARD CHAINS.

NEW CONSTRUCTION.



Patented Sept., 1904.

COTTER DETACHABLE.



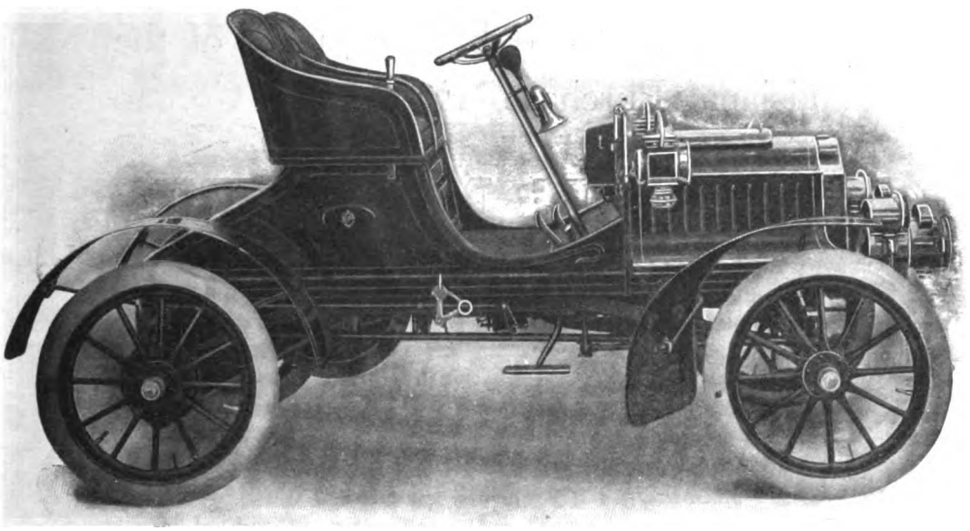


"Whitney" Roller Chains are now used for the Main Drive on most of the leading American Motor Cars and the "Wizard" Chains and Sprockets are more desirable for Circulating Pumps and Cooling Fans than any other style on the market.

THE WHITNEY MFG. CO., - Hartford, Conn.

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OLDSMOBILE



TOURING RUNABOUT.

$750.

HANDSOME, SPEEDY, COMFORTABLE.

A revelation of the possibilities of the single cylinder construction—equipped with famous 7 H. P. Oldsmobile motor—easily makes thirty miles an hour—climbs heavy grades at high speed—its style and elegant appointments meet the requirements of the most fastidious driver—pre-eminently the gentleman's driving car.

We announce to our selling agents and the American public that we can absolutely guarantee prompt delivery on all of our new designs. Our already immense factory facilities, nearly one million square feet of floor space, have been greatly increased to make this possible, and our entire force will work all winter in anticipation of next season's demands. By March 1st we will have over 2,000 completed cars in our warehouses—the largest stock ever gotten together by any manufacturer in the world.

In addition to our new $650 Standard Runabout and our new $950 Light Tonneau Car, we have brought out a new type of Delivery Car, full announcement of which will be made next week.

The Oldsmobile was the ONLY light car awarded a gold medal at the St. Louis Exposition.

CORRESPONDENCE INVITED.

OLDS MOTOR WORKS,

1332 Jefferson Avenue,

DETROIT, U. S. A.

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A Grand Prize

Has been awarded by the Juries of the Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

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WINTON

$4500 $3500 $2500 $1800

The most valuable automobile proposition of the year is the WINTON sales agency.

We promised a surprise in the number and excellence of WINTON offerings for 1905, and we have kept our promise.

A few days ago the question was:—"What will WINTON build?"

Now it is:—"Can I have the WINTON agency?"

WHY?

Because the 1905 products of the house of WINTON represent:—

1—A complete line of four-cylinder cars.

2—A wide range in price, enabling the dealer to secure orders from more purchasers than he can interest in any other line.

3—Substantial quality in every model.

4—Cars simple in construction—practically foolproof—and hence desired by experts and beginners alike.

5—Power greater than the rating.

6—The most accessible vertical motors ever produced.

7—The newest and greatest improvements, not only in motor, but also in carburetor, lubrication, igition, spring suspension, radiation, steering gear, etc., making WINTON cars the genuine automobile sensation of the time.

The whole subject in a few words is this:—

We have studied the wants and needs of automobile buyers.

We have designed our products accordingly.

Motorists are pleased and dealers are enthusiastic.

Is your agency application in? If not, you are giving your competitor an opportunity to handicap you throughout the whole season of 1905.

Our booklet No. 3 tells the whole story of WINTON excellence in brisk and business-like paragraphs. Shall we send you one?

The Winton Motor Carriage Co.

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

POLAR COMPOUND.
An anti-freezing solution, with the WINTON guarantee. No need laying up your car throughout the coldest season. We will advise you fully if interested.

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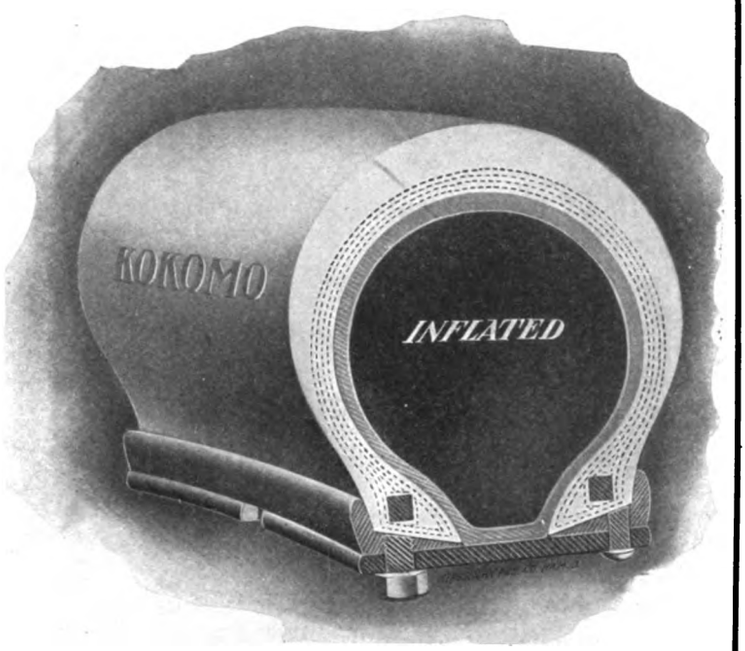
— THAT ETERNAL QUESTION —

— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

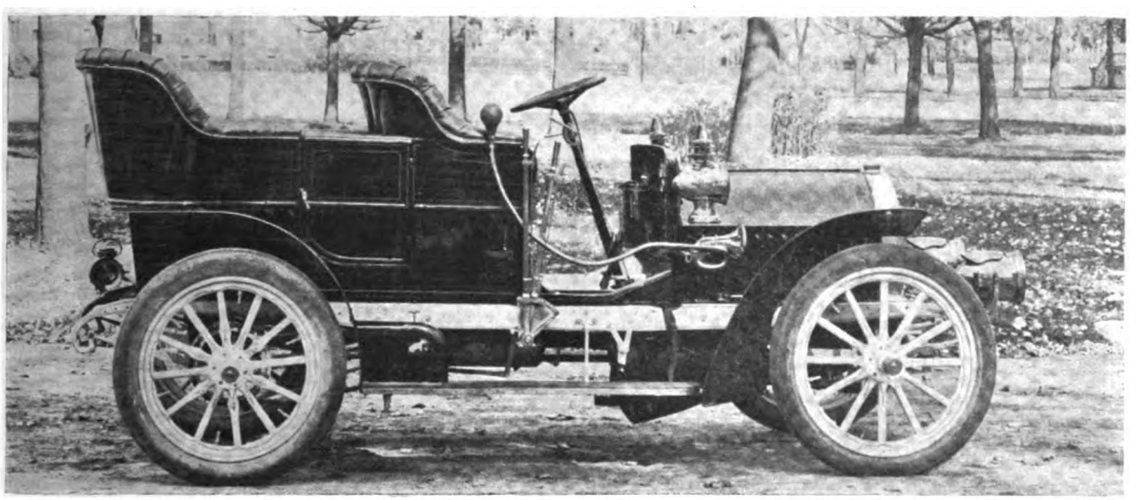
KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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Locomobile GASOLENE CARS.

1905 MODELS.

FOUR Styles in all. Each car equipped with a powerful four-cylinder front vertical motor, sliding gear transmission, and beautiful double side-entrance tonneau body. The most attractive line of high-grade cars on the market. Specially selected materials. Workmanship and finish of the highest possible character. Our complete line, record for reliability, and facilities for early Spring delivery, will interest every agent. Write for full particulars concerning our product and our agency proposition.



15-20 H. P. MODEL. PRICE $2800, COMPLETE.

Equipment includes five lamps of best quality and full assortment of tools, accessories and spare parts all ready for touring. All cars similarly equipped.

LOCOMOBILE LINE FOR 1905.

15-20 H. P. $2800

20 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Three-speed transmission. Pressed steel frame. Wheel base, 92 in. Weight, 1800 lbs.

20-25 H. P. $3700

25 h. p. motor with automatic inlet valves, and jump spark ignition. Three-speed transmission. Channel steel frame. Wheel base, 96 in. Weight, 2300 lbs.

30-35 H. P. $5000

35 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Three-speed transmission. Pressed steel frame. Wheel base, 106 in. Weight, 2500 lbs.

40-45 H. P. $7500

45 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Four-speed transmission. Pressed steel frame. Wheel base, 110 in. Weight, 3000 lbs.

THE *Locomobile* COMPANY OF AMERICA, Bridgeport, Conn.

Member Association of Licensed Automobile Manufacturers.

BRANCHES

NEW YORK—Broadway, corner of 76th St.
PHILADELPHIA—No. 249 N. Broad St.
CHICAGO—No. 1354 Michigan Avenue.
BOSTON—No. 15 Berkeley St.

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WHAT THE FORD DID ON ELECTION DAY

at the Empire City track, Yonkers, N. Y., fully entitles it to rank as at least one of the

WONDERS OF THE WORLD.

Think of the 20 H. P. Ford beating the pick of foreign racing cars of up to 90 H. P. and of three times its weight! Design and construction will tell. And that the performance was no "fluke" is attested by its record on the same track October 29—five miles in 4:43 3-5. He is a wise agent who moves now to reap the benefits of Ford quality and popularity.

FORD MOTOR COMPANY, Detroit, Mic .

Races at Cleveland

"The Real Excitement

"of the day was furnished by the "fine showing made in a stripped "10-horsepower White Touring "Car by Webb Jay, who won two "out of three events, defeating "racing and semi-racer gasolene cars "of much greater power." — *The Automobile, October 22d.*

The Incomparable WHITE

WHITE Sewing Machine COMPANY Cleveland, Ohio.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

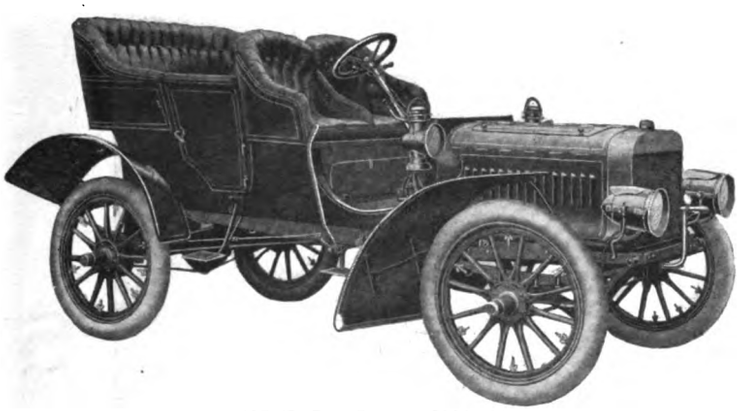
Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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The FORD 1905 Cars

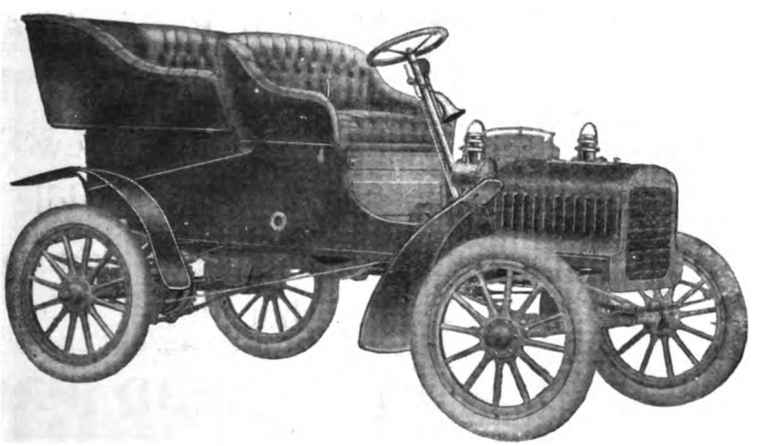


MODEL B. Price, $2000.00.

HENRY FORD'S LATEST AND GREATEST SUCCESS.

Our 1905 Touring Car weighs only 1710 lbs. The 4-cylinder vertical motor develops over 20 horse power, SO THAT THIS CAR HAS MORE POWER FOR ITS WEIGHT THAN ANY CAR IN THE WORLD. This means considerably less wear on the tires and consequently a great saving to the owner. It also means there is ample reserve power for steep grades and sandy roads.

Wheel base, 92 inches; direct drive, with universal coupling; cylinders, 4 x 5, water cooled; automatic oiling device with force feed; large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

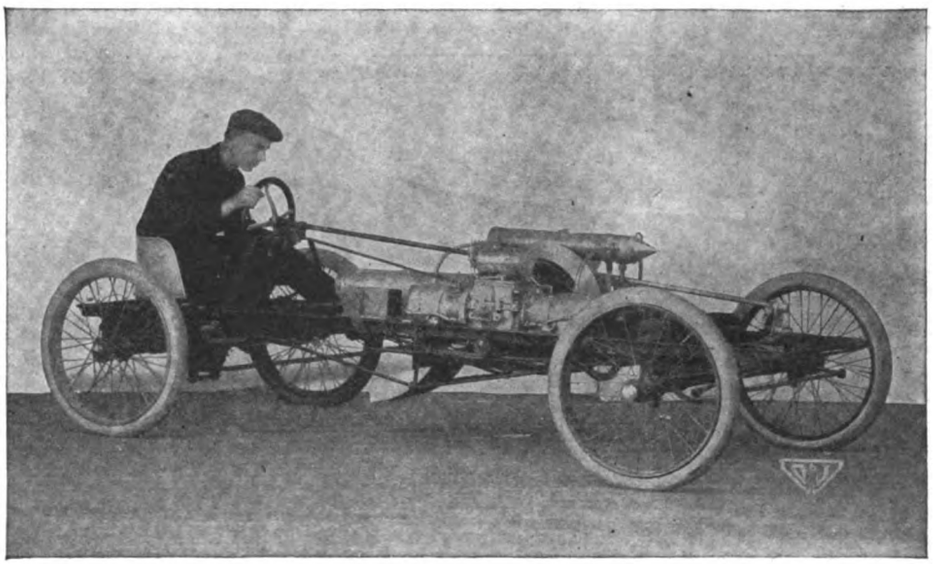
The improvements on the FORD two-cylinder car place this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horse power, planetary transmission, chain drive, and increased gasoline capacity. The most stylish, low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. Write us To-day for Full Information.

THE FORD MOTOR COMPANY, - Detroit, Mich.

JOHN WANAMAKER, Selling Agent for New York and Philadelphia.

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One Mile, 55 Seconds.

BULLETIN OF G & J RECORDS.

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.
Peerless Green Dragon,
By Barney Oldfield:
9:12 3-5.

WORLD'S TRACK RECORDS.
Peerless Green Dragon,
By Barney Oldfield:

2	miles,	1:51 1-5
3	"	2:47
11	"	10:18 1-5
12	"	11:15
13	"	12:12 1-5
14	"	13:09
15	"	14:05
16	"	15:01
17	"	15:57
18	"	16:33
19	"	17:40 2-5
20	"	18.45 2-5

WORLD'S TRACK RECORDS, FIVE MILES, FOR LIGHT WEIGHT AND MIDDLE WEIGHT CARS.
Ford Racer,
by Frank Kulick:

First mile,	59	sec.
Second "	57 2-5	"
Third "	56 4-5	"
Fourth "	55 1-5	"
Fifth "	55 1-5	"
Total,	4:43 3-5	

WORLD'S 1-MILE TRACK RECORD FOR LIGHT AND MIDDLE WEIGHT CARS.
20 H. P. Ford,
by Frank Kulick:
55 sec.

WORLD'S 1 MILE TRACK RECORD FOR TOURING CARS.
Pope-Toledo,
by George Fuller:
1:00 3-5.

WORLD'S 10 MILE TRACK RECORD FOR TOURING CARS.
Peerless,
by Barney Oldfield:
10:50 1-5.

WORLD'S AMATEUR 1-MILE TRACK RECORD.
"Home-Made Car,"
by Frank A. Garbutt:
58 2-5.

FRANK KULICK, in the 20 H. P. FORD

on the EMPIRE CITY TRACK, TUESDAY, NOV. 8, makes as sensational a win in the automobile world, as T. R. in the political world—defeating Bernin in 60 H. P. Renault and Sartori in 90 H. P. F.I.A.T., and making a new mile track record for light and middle weight cars—55 sec., giving additional proof of the fact that the

G & J THREAD FABRIC TIRES

are fast—and the same conditions of tire construction that cause them to be fast, make them most durable.

Main Office and Factory:

G & J TIRE CO. Indianapolis, Ind.

Branches: Detroit, Mich., Chicago, Ill.

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THE PEERLESS GREEN DRAGON

Equipped with

GOODRICH CLINCHER TIRES

MAKES A NEW WORLD'S RECORD.

Five Miles in Four Minutes and Thirty Seconds.

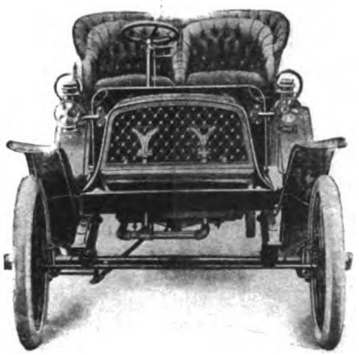
This is the latest achievement of Barney Oldfield in the races at Denver, Col., Nov. 6th. Most of our fastest automobile drivers demand GOODRICH TIRE EQUIPMENT.

THE B. F. GOODRICH COMPANY, Akron, Ohio.

NEW YORK, 66-68 Reade St. and 1635 Broadway.
CHICAGO, 141 Lake St. CLEVELAND, 420 Superior St.
BOSTON, 157 Summer St. PHILADELPHIA, 909 Arch St.
BUFFALO, 9 W. Huron St. DENVER, 1444 Curtis St.
DETROIT, 80 E. Congress St. SAN FRANCISCO, 392 Mission St.
LONDON, E. C., 7 Snow Hill.

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PREMIER
QUALITY CAR
DIRECT RADIATION.

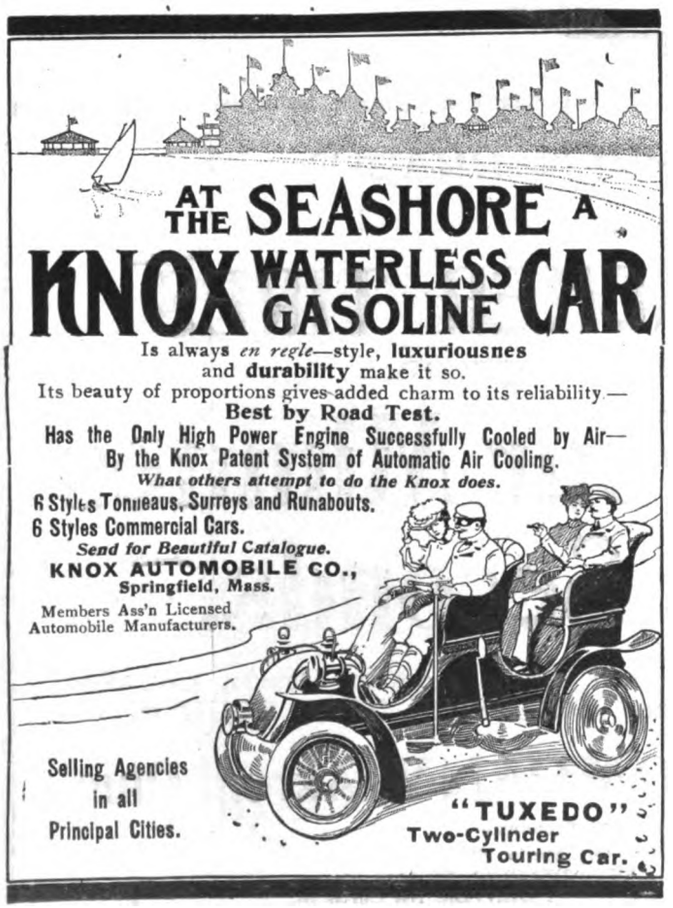


(Air-Cooled.)

The demand for light, high-powered cars is increasing every day. Drivers who have spent one season with small cars are usually ready for more speed, more power, more comfort and more accessibility to their motor for the second year's driving. Most Premiers are sold to posted buyers. Our output for the coming season is being greatly increased, and we are ready to talk 1905 deliveries ***now.***

A few additional first class agents wanted in unoccupied territory.

Premier Motor Mfg. Co.
INDIANAPOLIS, IND.





I ASKED DAD THE OTHER DAY WHY HE'D CHANGED TO MORGAN & WRIGHT CLINCHER TIRES AND HE SAID HE GOT TIRED OF ASKIN' FARMERS TO BRING HIM HOME

SHATTOCK & McKAY,
Chicago.

Messrs MORGAN & WRIGHT,
Chicago, Ill.

Gentlemen: It was a fortunate day for the undersigned when he specified the Morgan & Wright clincher tires on his automobile. Although I have used them constantly for the past six months, they are still in the best of condition, and I see no reason why they cannot be used throughout another season. That "Morgan & Wright tires are good tires" is unquestionable; they certainly assure peace and contentment, and do not necessitate jeopardizing one's moral character with the whole vocabulary of cuss words.

Yours very truly,
HENRY W. McKAY.

MORGAN & WRIGHT,
CHICAGO.

New York **Dayton** **Detroit**
St. Louis **San Francisco**

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ORIENTS

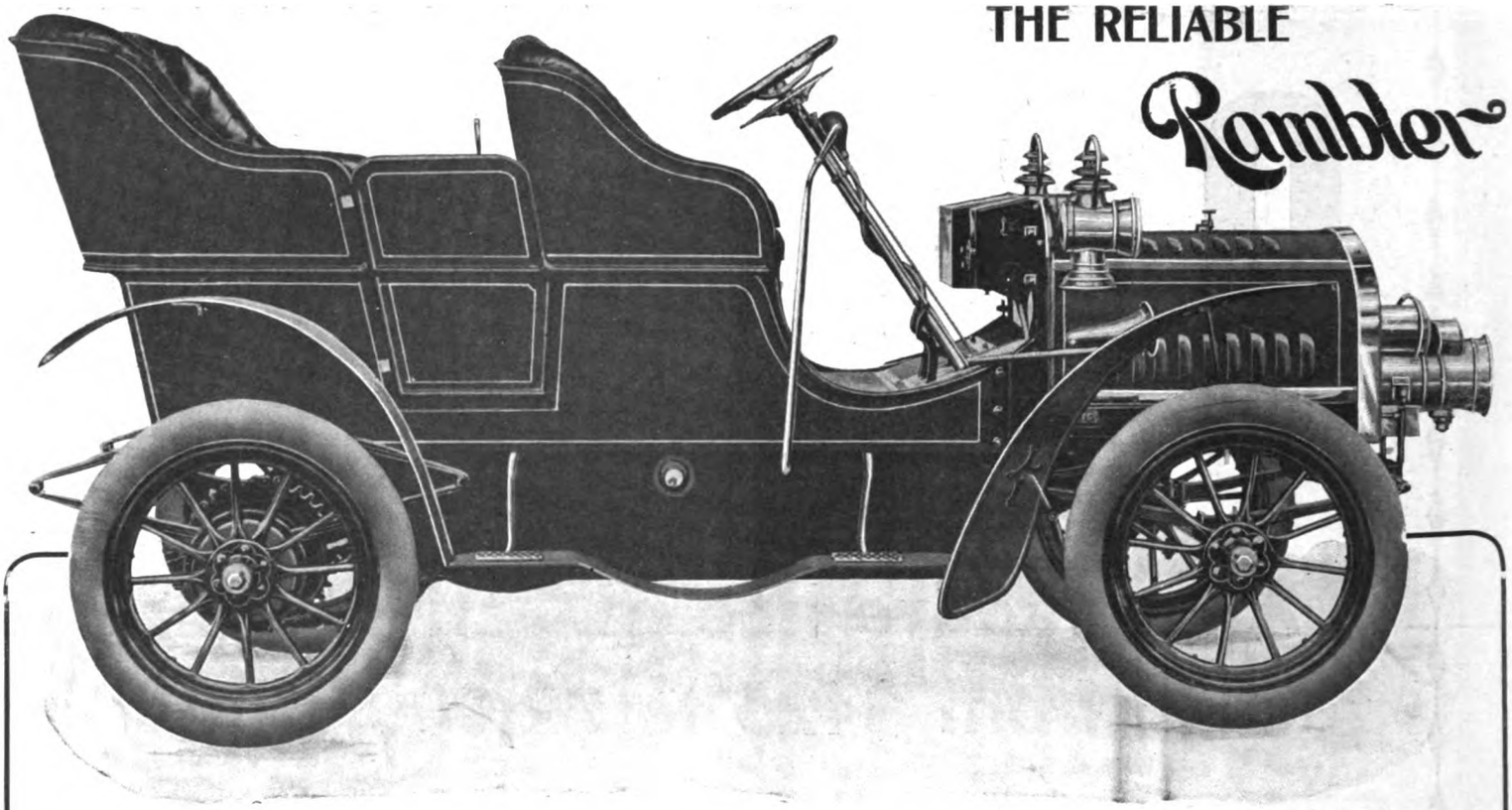
FOR 1905.

An attractive line of Cars ranging from $425 to $2,000.

WE are pleased to announce that in addition to our Buck-board line we shall offer for the coming season an excellent four cylinder air-cooled touring car, with side entrance tonneau and thoroughly up-to-date construction, to list at $2,000. Also an attractive Car of latest construction, listing at $1,500. It is our intention that our ORIENT line for 1905 shall be second to none, and comprise one of the most attractive agency propositions on the market. We invite correspondence and shall be pleased to furnish photographs and full information to those who desire to consider our agency.

WALTHAM MFG. CO., Waltham, Mass.

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THE RELIABLE

Rambler

Surrey, Type One. 1905 Model.

Two Cylinders. 16 H. P. Immediate Delivery. $1350.

In the race at Rockford, Illinois, October 8th, a RAMBLER, 1904 model, with two cylinders, won a mile race from a 1905 model of another make with four cylinders and nearly twice the rated power.

Time, 1:17 2-5 vs. 1:19.

RAMBLER'S rated power.

Other car's rated power.

RAMBLER'S cost.

Other car's cost,

and yet the RAMBLER is not designed for speed, but for practical work—for use on rough roads and hills.

The working idea of the RAMBLER factory is simplicity—the putting together of mechanism that any one with good sense can manipulate. This at the lowest price consistent with good workmanship—a price much lower than other manufacturers', because of our enormous output, which makes possible a great buying power and the employment of each man and each machine for one detail only.

Let us tell you more about how the RAMBLER is built—and enjoyed.

THOMAS B. JEFFERY & COMPANY,

BRANCHES: BOSTON, 145 Columbus Avenue.
CHICAGO, 304-306 Wabash Avenue.
PHILADELPHIA, 242 North Broad Street.

Main Office and Factory: **Kenosha, Wis.**

NEW YORK AGENCY, 140 West 38th Street.

REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, November 17, 1904. No. 8

BAN ON SECOND-HANDS ALSO

License Association Defines Its Position so Clearly that Agents Cannot Misunderstand it.

If there are any agents handling cars included in the Association of Licensed Automobile Manufacturers who are beset by doubts or laboring under delusions of any kind, a broad, illuminating light will be cast in their direction within the next few days. The lamp, that is, the letter, that will shed the light has already been trimmed, and is being mailed from the office of George H. Day, the general manager of the association.

It makes clear what was already clear to the great majority of the trade—that no agency for a licensed car will be given any dealer engaged in the sale of other cars. The agent who would sell licensed cars must devote himself to them exclusively, and no subterfuges or beatings around the bush will be permitted; that is to say, no licensed dealer can engage in the sale "on the side" or under another name of other than the licensed product; "either directly or indirectly," is the way Mr. Day's letter reads, and it is understood to mean exactly what it says.

Mr. Day's communication also makes plain what is not so generally known—that the terms of the Selden license absolutely prohibit the handling not merely of unlicensed new cars, but of unlicensed old ones; that is to say, licensed agents cannot engage in the purchase or sale of unlicensed second hand cars. Few dealers appear to have been aware of the fact, and, though Mr. Day conveys the information in the diplomatic language for which he is famed, it is not to be mistaken. Nor is there much doubt that it will prove in the nature of a bomb that will cause the retail trade to more than "sit up and take notice."

Weigle Goes Abroad.

Theo. Weigle, right hand man of Secretary Miller, of the Diamond Rubber Co., sailed yesterday for an extended trip abroad. He will be absent two months, during which time he will combine business with pleasure.

Pardee Joins Maxwell-Briscoe.

The plans of the Maxwell-Briscoe Co. are now rapidly maturing. That the intention to obtain a full share of the metropolitan trade is included in these plans was made evident this week by the leasing of the premises 317-319 West Fifty-ninth street, where the New York salesroom for Maxwell cars will be located.

Of no less interest is the man selected for the management of the branch. He is none other than Colonel K. C. Pardee, so long and favorably known because of his connections with the Packard interests both in Chicago and New York.

Bad Fire in Buffalo.

Seventeen automobiles, valued at $15,000, were destroyed and several persons burned or otherwise injured as the result of a fire which took place at the garage of the Utica Automobile Station, Buffalo, N. Y., last week. It is believed that a goselene tank in the stable had been left uncovered, and that the fumes of the liquid spread to a stove in the building.

William F. Polson, proprietor of the garage, and Earle Marshall Reid and Leonard MacGregor were severely burned.

Thomas Sails for Paris.

E. R. Thomas, the Buffalo manufacturer, is among the Americans who will attend the Paris show; he sails this week. As Advertising Manager Megargel expresses it, Mr. Thomas will be "the guest of a prominent French manufacturer, will study French designs and incidentally book orders for the new 40 horsepower Thomas Flyer."

Selden Dicision Next Spring.

Although it is popularly supposed that the Selden litigation will not reach an end for a year or more, the communication which General Manager Day of the A. L. A. M. has issued to agents quite upsets that notion. He states that the proceedings have been pushed so energetically that a decision is expected next spring.

Emile Sterne, representing the Leon Bollee Motor Syndicate, of London, is now in this city in the interests of that concern. He has already chosen Norris Mason, New York, as representative.

FOREIGN CARS ARE IN

Several Importers Get Space in New York Show—Chicago is Considerably Oversold.

It appears that while the restaurant at Madison Square Garden will not be restricted to the exhibition of foreign cars in January next, as it was at the 1904 show, there will still be a thoroughly representative showing there of the product of transatlantic firms.

No special effort has been made to secure applications from these concerns. In fact, they were not solicited at all by the managers of the Garden show. Nevertheless, and in spite of the existence of the ironclad rule that no one showing at the Garden can exhibit at any other show in this city, the pick of the foreign cars will be on view when the doors of the famous building are thrown open on January 14. Space was asked for, and has been allotted, to the makers or representatives of such cars as the Panhard, Fiat, De Dietrich, Renault, Bolle, Hotchkiss and Delahaye. The exhibits of these cars will not be segregated, but will be found intermingled with the domestic products.

Overcrowding is not to be confined to the forthcoming show at Madison Square Garden. The Windy City function, too, is "long" on exhibits and "short" on space in which to bestow them, and the manager of the Chicago show has been sore perplexed to reconcile the conflict between the spaces and demand for them.

This year, therefore, for the first time the demand for space at the Coliseum has overtaxed the capacity of that huge building. In making the allotments it was found necessary to scale down the applications to the extent of about 30 per cent, that amount being deducted from the space applied for by each exhibitor. To obtain enough space to go around even then it became necessary to utilize every inch of floor surface in the main building—including the gallery—and the annex. The increase in the number of exhibitors is fifty.

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LOCOMOBILE'S NEW LINE

Veteran Company Drops Two-Cylinder Model and Makes Increased Power a Feature.

Four-cylinder cars only will constitute the Locomobile line for 1905. That they will be vertical engines goes almost without saying, as the Locomobile Company have always pinned their faith to that type, even the two-cylinder car, which has been discontinued, having employed them.

An increase in power also marks the new line, which will consist of four cars, as follows: 15-20 horsepower, $2,800; 20-25 horsepower, $3,700; 30-35 horsepower, $5,000, and a 40-45 at $7,500. Each price includes full equipment in the amplest sense of the word—five lamps, horns, tools, accessories, and also an assortment of spare parts, which approximate a value of $500.

The essential features of the cars, are, respectively: 15-20 horsepower—Mechanically, operated valves, all interchangeable; make and break ignition, current from magneto; three-speed transmission; pressed steel frame, wheel base, 92 in.; weight, 1,800 lbs. 20-25 horsepower—Automatic inlet valves, and jump spark ignition; three-speed transmission; channel steel frame; wheel base; 96 in.; weight, 2,300 lbs. 30-35 horsepower—Mechanically operated valves, all interchangeable; make and break ignition, current from magneto; three-speed transmission; pressed steel frame; wheel base, 106 in.; weight, 2,500 lbs. 40-45 horsepower—Mechanically operated valves, all interchangeable, make and break ignition, current from magneto; four-speed transmission; pressed steel frame; wheel base, 110 in.; weight, 3,000 lbs.

New York Firm Gets More Room.

Increasing business has forced Homan & Schultz, 140 West Thirty-eighth street, New York, to take a step that has been under contemplation for some little time. They have secured quarters on West Fifty-first street, where they will locate their storing and repair business. The Thirty-eighth street store will be remodelled and redecorated, and the entire ground floor utilized as a salesroom. The offices will be retained on the second floor.

The Homan & Schultz line for 1905 will consist of the Rambler, the National and the Marion. A foreign built car is also a possibility, although nothing has yet been done in the way of securing one.

Weber Prepares to Build.

Contracts were let this week for the erection of a building at 1,322-6 Michigan avenue, Chicago, to be occupied as a salesroom and garage by the Orlando F. Weber Co. The building will be two story and basement, 60x171 feet, have a glazed terra cotta, iron and plate glass front, and will cost $25,000.

The Week's Incorporations.

Chicago, Ill.—Pardee Ullman Co., under Illinois laws, with $25,000 capital, to manufacture motor vehicles. Incorporators: T. A. Parkhurst, F. J. Pardee, J. B. Hess.

Chicago, Ill.—Harmon Mfg and Distributing Co., under Illinois laws, with $50,000 capital, to manufacture automobiles. Incorporators: Henry Harmon, Theodore Stensland, H. W. Hering.

Springfield, Mass.—Knox Motor Truck Co., under Massachusetts laws, with $100,000 capital. Officers: President, Harry A. Knox, Springfield, Mass.; treasurer and clerk, Clarence J. Wetsel, Chicopee, Mass.

New York, N. Y.—Motor Car Equipment Co., under New York laws, with $25,000 capital, to deal in automobile machinery. Directors: Emil Grossman, Carl Kaufman and E. J. Kestenbaum, New York City.

Middletown, Ohio.—The Automobile Fender Co., under Ohio laws; with $20,000 capital. Incorporators: Jason G. Lamison, Americus Miesse, Mary R. Lamison, Blanche M. Fredm and T. C. Calvert.

Washington, D. C.—All-Around Philadelphia Automobile Co., under District of Columbia laws, with $50,000 capital. Incorporators: Frank C. Berens, S. Burkhart Emmert and C. Bernard Werle.

Mobile, Ala.—Mobile Motor Car Co., under Alabama laws, with $15,000 capital. Officers, Robert Morris, president; A. J. Spencer, first vice-president; M. Van Veuvel, second vice-president; Joseph Stone, secretary.

New York, N. Y.—The Peerless Motor Car Co., of New York, under New York laws, with $50,000 capital, to manufacture motor cars. Incorporators: E. H. Parkhurst, Cleveland, Ohio; C. G. Wridgway, New York City; J. H. Lack, Brooklyn, N. Y.

Increases of Capital.

The Welch Automobile Co., of Pontiac, Mich., has increased its capital stock from $50,000 to $100,000.

A certificate has been filed with the Illinois Secretary of State setting forth that Henson's Automobile Works have increased their capital from $1,500 to $2,500.

The Royal Automobile Co. of Jersey City, N. J., has filed an amendment of charter, providing for preferred stock. The capital stock is $250,000. Of this $100,000 is to be preferred stock.

Fenton May Enter Trade.

The Fenton Automobile Co., of Fenton, Mich., has its experimental car almost completed. Should it prove successful work on a larger scale will be commenced by the concern.

Fire Attacks Addis of Allentown.

The garage of the Addis Automobile Co., Allentown, Pa., was damaged by fire last week, the result of an explosion. Six automobiles stored there were destroyed.

WHAT ACME WILL OFFER

Prices Not Definitely Fixed but, like the Product, they will be Attractive.

If the Acme Motor Car Co., Reading, Pa., do not make a decided impress on this season's trade it will be "up to" the factory, or to circumstances entirely beyond its control. Certainly the fault, if fault there be, may not be charged against the designing room or to the business management, which has set the price at a figure as attractive as the product itself.

The Acme line for 1905 will consist of a 9-horsepower runabout with single vertical engine of the high speed type, slide gear ball bearing transmission giving three speeds forward and a reverse, with bevel gear drive. The body is of the most modern design, with locomotive hood and individual seats. The price, though not definitely set, will be about $750.

Another model of the runabout type, but more powerful, will contain practically the same features as the smaller car, but will have a two-cylinder vertical motor and will list at about $875.

The third and largest model will be a four-cylinder car of 30 horsepower and intended to embody every feature that modern mechanical practice has approved. This car will have slide gear transmission giving four speeds forward and a reverse, will have 34-inch wheels with 4-inch tires. This model will list at about $2,500.

One of the features common to all Acme cars will be that the bearings on the crank case are all contained in the upper half, making it possible to readily remove the lower half of the crank case so that the crank mechanism may be easily inspected.

A special addition to the Acme line will be an enclosed cabriolet model, hooded and lighted and embodying a number of conveniences, which is intended, of course, for use in inclement weather. It might readily be called a pony opera bus; it will comfortably seat four in the rear.

Smith Executes a Big Deed.

The Smith Automobile Co., of Topeka, Kan., has executed a trust deed for $50,000 to the United States Trust Co. of Kansas City. The latter holds the property of the Smith company and delivers to it bonds for the $50,000. The bonds are payable in five, ten, fifteen and twenty years.

Clement Smith, president of the company, said that the deal was made to raise money to build an addition to the automobile factory at Tenth and Jefferson streets. It is planned to double the floor space and triple the capacity of the plant. Work on the new buildings which will occupy lots on the same block will be begun at once.

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WARMED CARBURETTERS

Souther Contends that the Warming Apparatus Does Not Justify the Ends Served.

So much has been said and printed about it that it must appear to many that the use of warm air to assist carburetion is vitally necessary. It seems to be a cure for all evils, a means of producing power almost for nothing. The claims are endless.

One of the claims most often made is that warming the air dries it, whereas nothing can be further from the truth. For, as a matter of fact, warm air will contain more moisture than cold air if it gets the chance to pick it up. If air is taken from the side of a water jacket or from the back of the radiator, or from contact with the muffler pipe, that air contains just as much moisture as any other air in the neighborhood. To be sure, by warming the air it is rarefied, and less of it will pass through a given aperture under given conditions. This means that the mixture gets less oxygen and becomes richer because of it. But as to moisture, if the mixture actually gets the same weight of air then it gets the same weight of moisture.

Some carburetters are heated by circulating hot water about them. About the only time a decent carburetter gives any trouble is when cold. It is sometimes difficult to start a motor on a cold day, but when the machine is cold so is the circulating water, and the warmed (?) carburetter is no better than any other under starting conditions. After the motors have become warm and everything is running in good shape, the warming of the carburetter makes very little difference one way or another. Such contrivances require a different adjustment of the carburetter; but that is all.

The real benefit that comes from taking warm air for the carburetter is that there is a less range of temperature between the hot day and the cold day; the summer day and the winter day. The temperature range between a hot summer day and a cold winter one is a hundred degrees more or less. After the machine has been running a while and everything is warmed up, the temperature range with the warmed air is certainly not over half of that, and probably less. So far, the warming of the air is a benefit, but no further. The device is warranted as long as it does not bring additional complications with it, but as for making a complicated carburetter for the sake of warming and introducing special devices for warming air, it will not pay commercially, except, perhaps, for a salesman's talking point; it has no real effectiveness, and seems in the nature of adding complication and expense without serving any real purpose.

As a matter of fact, the air under the hood of the engine is fairly warm anyway after the motor has been running a little while, and the conditions are favorable for the evaporation of gasolene and the proper and easy mixing of it with air.

Immense improvements in carburetters will be made to increase the efficiency of them; but the greatest improvement will not be along warming up lines.

HENRY SOUTHER.

Mercedes Makes Its Peace.

It is likely that the importers of the Mercedes car made their peace with the Selden patent when on Monday last Allen, Halle & Co. entered into a contract with Smith & Mabley whereby the latter firm becomes their distributing agents for the well known German machines. The agreement was made on Monday, and the Mercedes will be the only imported car sold by Smith & Mabley in the future, except a few others for which they have already contracted.. This arrangement will allow Allen, Halle & Co. to bring the Mercedes into this country with the official Selden sanction and to sell them without fear of legal prosecution.

Allen, Halle & Co., through Smith & Mabley, have also brought the Selden "blessing" on the heads of the purchasers of the Mercedes cars brought into this country since they took the American agency from C. L. Charley, of Paris.

New Concern in Cleveland.

The W. N. Booth Car Co. is the style of a new concern that has just been organized in Cleveland, Ohio. W. N. Booth, who has been engaged in the bicycle and automobile business in that city for a number of years and is a practical mechanic, is the vice-president and general manager. E. Holmes, a wealthy retired carriage man, is president and treasurer. Both gentlemen were recently in the East, and during their visit closed with the Pope Mfg. Co. for the Pope-Hartford and Pope-Toledo agencies for Cleveland and the surrounding territory. They will occupy a new garage at Wilson and Paynes avenues, in Cleveland, at which address Booth has long been established.

Detroit Trade Again Increased.

The Wayne Automobile & Supply Co. has been formed in Detroit to handle the Wayne cars made in that city. The company is composed of T. F. A. Osius, president; A. W. Muer, secretary and treasurer, and J. B. Farr, manager. They are not connected with the Wayne Automobile Co., manufacturers of the car of that name.. They have taken the ground floor double store at 253-255 Jefferson ave.

Selden "Stick" Prods Neubauers.

That the Association of Licensed Automobile Manufacturers is still exercising its "big stick" is evidenced by the suit filed on Saturday last, 12th inst., in the United States Court for the Southern District of New York against Henry and Albert C. Neubauer, New York. The Neubauers are trading as the Palais d'Automobile, and have been dealing in foreign cars. They are, of course, charged with engaging in their sale in violation of the Selden patent.

CRATER'S WIFE APPEARS

Third Act in Newark's Serio-Comic Business Play—Cars Sold for a Song.

Bargain counter prices were completely overshadowed in Newark, N. J., last week, when four automobiles were disposed of at constable's sale at prices ranging from $50 to $55 each. The sale was the latest step in the bitter litigation waged between L. S. Wheaton and J. E. Crater, two well known Newark dealers. So far Wheaton has all the best of it.

The matter came up in the First District Court, when Judge Raymond rendered a decision in tre controversy between Wheaton and Carter, over the seizure of three automobiles held by Crater in the building, 224 Halsey street, Newark. The court decided in favor of Wheaton, but the loser may appeal the case.

It will be recalled that the trouble between the two reached a head early last month, when Crater moved out of the building, leaving October's rent unpaid. Wheaton sued for it and obtained judgment. To satisfy the judgment of $150 and costs four automobiles were sold, and three of these were purchased by Wheaton for prices ranging from $50 to $55 each. The fourth car was bought by Charles H. McKee for $56.

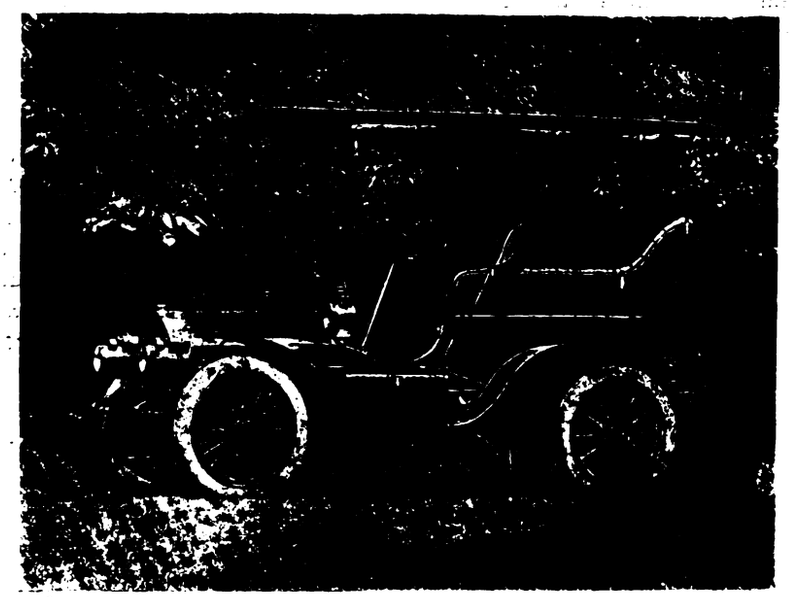
However, the purchasers did not obtain immediate possession of the cars, for when they undertook to remove them Crater exhibited a chattel mortgage in which it was alleged that the ownership of the cars was vested in his wife, Mrs. Annie E. Crater, and William Moore, as trustee. In order to enable the court to decide the ownership of the property, Wheaton replevined the goods, putting up a $600 bond, and in turn Crater re-replevined, signing a bond for double that amount. It was the replevin suit that was tried, as stated above.

Judge Raymond struck out the chattel mortgage as void, which decided the case in favor of Wheaton, and immediately after the decision he and a constable repaired to 1 Beecher street, where Crater had the cars, and took them away. It was necessary for the constable to break into the building, as no one was about the barn to unlock the door. Hitched behind a truck, the three cars made quite a curious sight as the successful litigant paraded Halsey street with them on his way to his garage.

Will Wind Up Toronto.

It has been decided to wind up the embarrassed Toronto Automobile Co., Toronto, Canada. The creditors will receive about 60 cents on the dollar. The assets of the company consist of automobiles to the value of $5,225, and there are claims of $4,400 for wages and other preferred liabilities. The unsecured debts amount to $5,831. The accounts outside that of the banks are small. The company had an authorized capital of $40,000, of which $1,400 was paid up.

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GRAND PRIX

AWARDED

HAYNES AUTOMOBILES

At St. Louis Exposition.

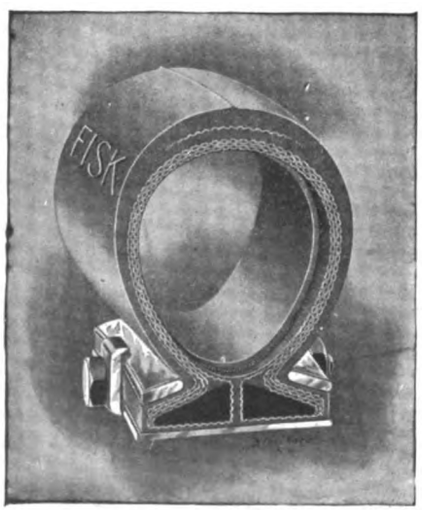
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Branches: New York, 1713 Broadway. Chicago, 1420 Michigan Ave. AGENCIES IN THE PRINCIPAL CITIES.

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AMERICAN TIRES	AMERICAN MACHINES
FISK TIRES	OLDS MACHINES

Went successfully through the non-stop run in England, then topped off 3000 miles on the hardest kind of roads. Fisk up-to-date construction can't be overlooked.

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THE FISK RUBBER COMPANY,

CHICOPEE FALLS, MASS.

Western Sales Office, 52 State Street, Chicago.

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CABLE ADDRESS, "MOTORWORLD," NEW YORK

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NEW YORK, NOVEMBER 17, 1904.

Retaining Good Will.

When an industry is still in its infancy, as is the case with the automobile business even now, it frequently becomes necessary to make deviations from the straight and narrow path of right and to take refuge in the comforting arms of expediency. In other words, it pays to use sugar instead of vinegar in retaining as well as in catching customers.

The customer who pays $1,000 or $2,500 in cold cash for a car is a very welcome visitor in a store when he comes a-buying. The dealer is frequently ready to fall on his neck and weep tears of joy—figuratively, at least. It comes with a very ill grace, then—or so it seems to the customer—for him to transmogrify the glad hand into the frozen face a few days or weeks later, when the customer comes in and tells about a something that has happened to his car and put it hors de combat. It may be something that would cost as much as 30 cents to replace or repair; but if it were ten times that sum it is a small price to pay for retaining the customer's good will. But some dealers will at once claim that the owner is at fault, and not his car, and that without seeing the afflicted part or knowing anything about it. They jump at a conclusion, arguing on general principles that the fault is with the customer. Perhaps it is. But that is no reason why you should proceed to ram the fact down his throat and show him what a monumental failure he is as a "chauffeur." He has feelings, and you might as well be tender of them.

One of the most successful dealers in this city ascribes a large part of his success to his diplomatic handling of touchy or disgruntled customers. He humors them, discreetly and with as small cost as possible, but at any reasonable cost, nevertheless. In this policy he is backed up by the company which makes his leading car.

"What is the use of quarrelling with and losing a good customer, one who has paid you hundreds of dollars in profits, just for the sake of a tithe of that sum?" he said. "You have got to keep your customers if you want to sell them again; and if you don't, you might as well shut up shop."

Because of this lenient policy, this dealer retains his customers year after year. They buy new cars of him, and never think of going elsewhere. They buy satisfaction from him, and that is worth a lot to a customer, as he knows well.

There will come a time, of course, when leniency will no longer be a necessary policy, and when dealers and makers can afford to call a spade a spade, and demand and receive value received for every part they supply, every repair they make. But that day is not here yet, and meantime the trade has to cope with conditions as it finds them.

Tariff Discourgement.

Although the islands have not held much profit and do not offer much promise for the automobile trade, as a matter of principle the automobile manufacturers or their national association should interest themselves in the proposed revision of the Philippines tariff.

As the semi-military government apparently "needs the money," ad valorem duties are being quite generally substituted for specific taxes, and the result is a "boosting" of rates that is sufficient to stagger that portion of American humanity that presupposes that the payment of $20,000,000 and American government entitle the manufacturers in the United States to at least a "favored nation" clause. Thus, in the case of automobiles, whether for passengers or merchandise, it is proposed to increase the duty from $60 per vehicle to 20 per cent ad valorem; that is to say, instead of $60, a runabout costing $1,000 will be made to bear a levy of $200.

As the Philippines need nothing so much as improved roads and improved means of locomotion and transportation, it would seem to the ordinary individual that anything that would stimulate progress of the sort should be encouraged instead of being rebuffed or retarded, which will be the effect of almost quadrupling the duty.

An effort should be made to show that portion of Washington officialdom in charge of the tariff revision—the Bureau of Insular Affairs, War Department—the folly of its ways, particularly as the bureau professes to be anxious to receive suggestions—that is, provided they are received not later than November 23.

Reducing Tire Maintenance.

In the matter of maintenance costs, the item "tires" in nearly every instance figures formidably; indeed, it is fair to say that tire maintenance is one of the bugaboos of trade and users alike. It usually takes the form of replacements, and replacements are expensive.

The lessening of this item has been the subject of much discussion; and is one of the constant aims of those concerned with the industry, who are not content to let the morrow take care of itself; they realize that it has a very considerable bearing on the future.

In this regard the action of certain progressive tire makers is worthy of more than passing note and attention. They have undertaken, if not exactly a campaign of education, then a policy of pointing out to users of automobiles that the reduction of tire maintenance rests considerably with themselves. The substance of it is that the heavy expense of replacements may be avoided in very many instances by merely having the tires recovered—that is, having new treads applied to them; the result of such recovering is, to all intents and purposes, a new tire or tires. This procedure involves merely a minimum of attention on the part of the motorist. He has but to watch his tires and have the work of recovering done before they

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have passed beyond the point where it is possible for it to be performed; this means before the tread has been "worn to a frazzle" and is hanging in shreds, and before the fabric has been injured by contact with the road or been rotted or weakened by the mud and water.

Recovering is one of those procedures and reliefs that is so obvious that now that it has been pointed out the wonder is that so few have thought of or resorted to it. The winter months would seem the time of all times when such work can best and with least inconvenience be accomplished. Do your tires need recovering?

Repetition Processes.

No one familiar with manufacturing processes now in vogue and those employed even so recently as three or four years ago can escape the conclusion that remarkable progress has been made in the direction of substituting repetition processes for the old hand ones. But if the matter is pushed a little further there is likewise no escape from the conclusion that almost as much more must be done before the automobile industry can be deemed to be in a position as far advanced as other metal working establishments.

There was a time when the man who talked of standardization was laughed at. We well remember being told by the representative of an allied trade that it was a waste of time for him to talk of furnishing parts in quantities to automobile manufacturers. "Half a dozen of each part is a respectable order," he said, "and twenty-five is a big one. Some concerns would like to contract for one or two parts. But such a thing as placing an order for one hundred parts is absolutely unheard of. There are few makers whose yearly output will reach that figure, and their turnover is split up into half a dozen or a dozen different models."

As a matter of fact, many makers a few years ago used to make their parts by hand. This was particularly true of forgings, where the number of each used was so small as to absolutely preclude the thought of having costly dies made to forge the parts in quantities, to say nothing of its being long odds that the patterns of the forgings would be entirely changed before the season was half over. So bar steel was heated and hammered in the smith forge until it assumed a shape somewhere approaching the desired one, and then filed or chipped with a cold chisel until it was reduced to its ultimate form. There was one maker who, less than two years ago, informed us, with considerable satisfaction, that he still hand-forged his crankshafts, and that his men had become so expert at the work that one of them could produce a finished shaft from the raw steel after working at it continuously for the space of one week!

That was an exception at the time, and today in many factories the most approved machine shop practices have been put in force. Such processes were first used and reached their highest stage of development in the manufacture of runabouts and small touring cars. There big outputs and small costs went hand in hand. The work was systematized, and every process put on a repetition basis. The result is too well known to call for more than passing mention.

When American makers began to turn their attention to big gasolene cars, however, it became necessary to in a small measure return to first principles. As had been the case years before, a few cars only were turned out, and they by a very large proportion of hand labor. The first cars were largely experiments, and many changes were made in them before anything approaching a permanent model was evolved.

That period, too, has passed. Big cars are now being produced on a big scale, and the time is not far off when the methods which were formerly employed as being the only possible ones will be abandoned for all time. The component parts of the cars will be turned out in large quantities, and to gauges and standards. Improved processes will be installed, and better cars and more of them will be placed on the market as a direct result of this progressive development. The success of the runabout type will be duplicated, and we will not only control our own markets, but become an important factor in those of other countries. Even in that day, however, standardization, as some people define the word, will still be far off. Each maker will standardize his work and turn out his parts in big lots. But there will not, and should not, be any loss of individuality, nor any wholesale copying of patterns and parts.

Demand for Single Tubes.

While the tire stores seldom sell any single tube tires for new equipment nowadays, it is very far from being the case that there is no demand for them. There is such a demand, and at times quite a brisk one. But it is not for new equipment. It is the old cars that are reshod with the once popular "hosepipe," principally because they are fitted with crescent shaped rims that will take nothing but cemented tires.

In a conversation with a well known tire man the other day we were informed that last summer the call for single tubes was so great that it taxed the capacity of his factory to supply them. August was the foremost month, and then, notwithstanding the knowledge that orders for these tires were increasing in frequency and size, and that preparations had been made to meet a larger demand, the latter was so great as to temporarily exhaust the supply. The sizes most called for were 28x2½ and 30x3-inch—just the sizes most used on the little steam cars and some of the earlier types of gasolene runabouts.

As far as the big sizes are concerned, the demand is, of course, insignificant. The inference is, of course, that where cars originally fitted with them are still in service the rims have been changed over so as to take detachable tires.

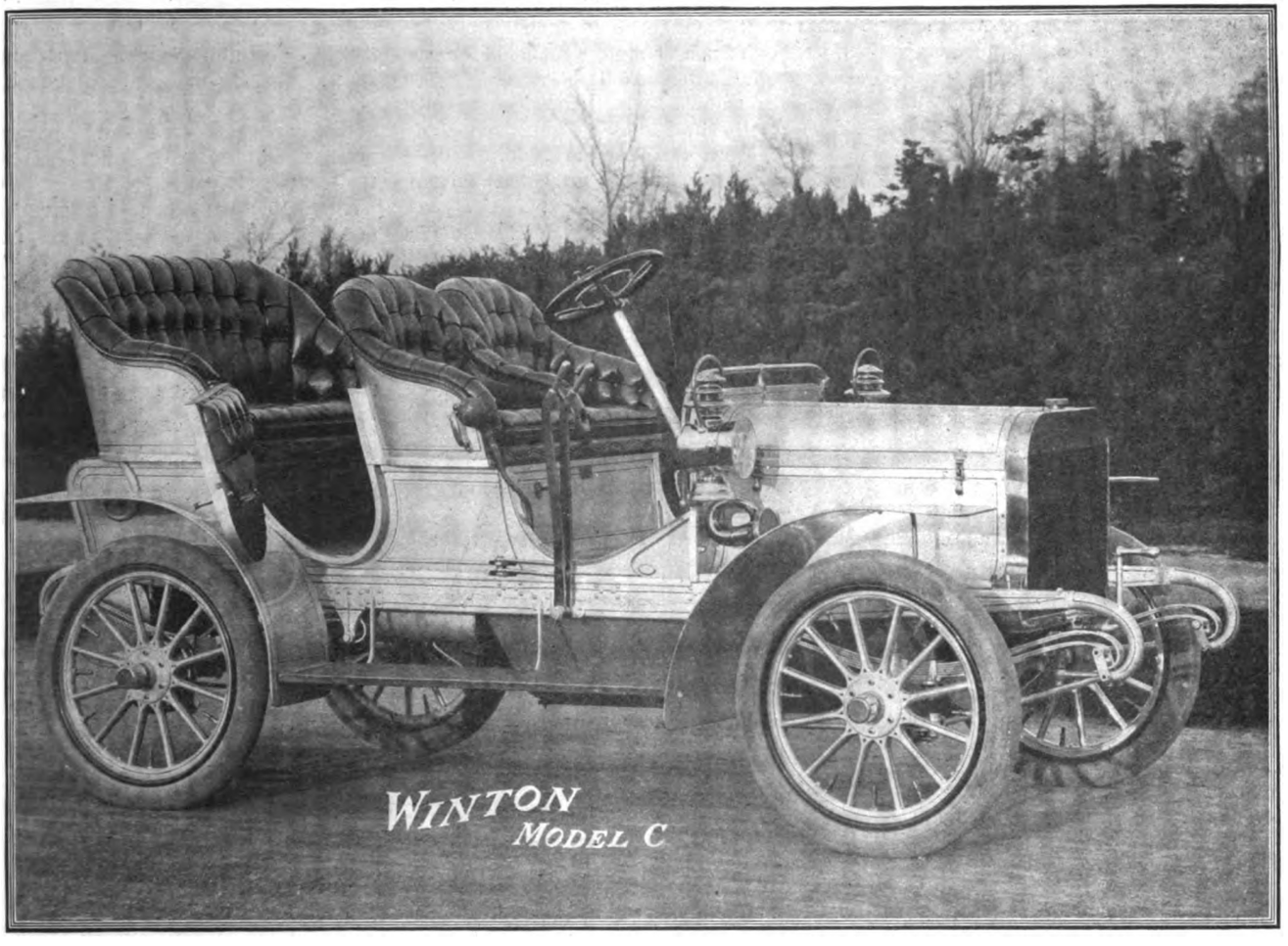
If a "wink is as good as a nod" to the Florida East Coast Association, it will lose no time in undoing and counteracting the one-man decision to make the Ormond carnival an invitation affair. When a man with an axe to grind is blessed with a little brief authority, he sometimes performs queer capers. Having a "past" and having lived in a glass house most of his life, the particular individual concerned is more than vulnerable. If he is permitted to sway the carnival to suit his ends, the lid will be lifted off a scandal that will make even the waves that beat the Florida beach flee in alarm.

Because the Motor World has made light of the proposed new club in New York, a mistaken idea exists. New York is big enough to support two clubs, but if the second one is to be inaugurated with a confession of inferiority and chiefly by men who are not automobilists, the tone of automobiling will be distinctly lowered. We can see no good reason why a lot of men should wish to pose or be permitted to pose for what they are not. It smacks too strongly of what is compassed by that expressive, if inelegant term, "four-flushing."

The remarkable demand for space attests that the show is still "the thing." If it is accepted as a sign of the times, next year's trade will establish a record, or possibly several of them.

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First of the Winton Vertical Four-Cylinder Cars.



MODEL C., 16-20 HORSEPOWER, $1,800.

Heller to Import the Pipe.

Another imported automobile will make a bid for American favor next year, Joseph S. Heller, of New York, having concluded arrangements with the makers of the Pipe car, made in Brussels, Belgium, for its sale here. He will be sole agent for the United States, the Dominion of Canada, Mexico, Central America and the West Indies. He has temporary quarters at 1,722 Broadway, but hopes to secure a salesroom of his own in the near future. One of this year's models, a four-cylinder machine of 15 horsepower, is now on its way to this country and is expected daily.

He will exhibit three models at the shows of imported cars in New York and Chicago. Two of them will be touring cars of 14-18 and 35-45 rated horsepower, and the third will be a racing machine of 90 horsepower, all of them having four cylinders. Mr. Heller expects to drive the racer in the Ormond races, but hopes that the events there will not be restricted to a few cars, as he thinks his machine is the fastest in the world. Charles Duplus, a racing expert from the factory at Brussels, will arrive in this country in a few weeks, and will remain here until after the Florida tournament and the shows.

Fogarty Returns from France.

Peter Fogarty reached this city on Thursday of last week, after a European trip of some months' duration. To a Motor World man he stated that he had not closed for a line of foreign cars, which was one of the objects of his trip across the water.

"I may do so a little later," he said with a smile; "that is, if I can do so without buying the factory. The Frenchmen seem to think that there is plenty of money in America, and they want a good slice of it before parting with any of their cars.

"During 1905 I shall continue to handle the Northern," he continued, "and it will be the only American car I shall sell. You can't do justice to two lines. I have had a most satisfactory year with the Northern. You know, my year began in May, and I sold fully 50 per cent more Northerns than I expected to dispose of."

Devlin Opens in Chicago.

Arthur E. Devlin, formerly connected in an important capacity with one of Chicago's large department stores, has leased the premises at 1,407 Michigan avenue, Cricago, Ill., and will act as Western distributing agent for the Acme Motor Car Co. of Reading, Pa.

Buffalo Gets Its Sanction.

With the grant last week by the N. A.. A. M. of a sanction for a show at Buffalo, N. Y., on March 13 to 18, there remains but one city to receive the necessary official authorization to hold its local exhibition. The city referred to is Cleveland, Ohio. Its sanction was, like that of Buffalo, withheld pending the settlement of a dispute between the local club and dealers. A compromise has been agreed on, however, and the sanction will be issued in a short time. It will cover the week of February 20-25, following the Detroit show.

The snarl that threatened to make trouble among the Washington (D. C.) dealers has also been untangled. As was the case with the row over the Boston show, it arose from the alleged "freezing out" of some of the dealers. Explanations were made last week, however, and a truce patched up. The show will therefore be held from March 27 to April 5, as announced.

The complete list, with dates of national and local shows, with the exception, as noted, of Cleveland, is as follows: New York, Madison Square Garden, January 14-21; Chicago, February 4-11; Philadelphia, January 23-28; Detroit, February 13-18; Toronto, February 27 to March 4; Buffalo, March 6-11; Boston, March 13-18; Washington, March 27 to April 5.

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Autocar Dedicates New Building.

The 210x45 three story and basement brick building which the Autocar Co. of Ardmore, Pa., have been rushing to completion finally has been finished. The equipment, which includes $35,000 worth of extra new machinery, has been installed, and the building was dedicated last Saturday, when the Autocar Co. gave a luncheon to five hundred of its employes.

With this addition, the Autocar Co. will have one of the most complete and finest equipped plants in the country. In it the general manager, John C. Speirs, can revel to his heart's content. Every one who knows him knows that this revelling will consist in working the plant to its utmost capacity, and having within it everything that a thorough manufacturing experience can suggest or devise.

As Mr. Speirs himself says, for the first time in his life, he has everything that he can ask for in the way of plant and equipment, and the result is sure to be seen in the production of the 1905 Autocars.

Incidentally, the new four-cylinder Autocar, the coming of which has put the trade on the tiptoe of expectancy, more than bears out the most sanguine expectations of its builders. A Motor World man, who was privileged to ride in the car last week, found a revelation in everything that goes to make up a good car.

While yet a little early to furnish details, it may be said that this newest product of the Autocar factory embodies some distinctly original features, both in construction and design, which have elicited the highest praise from those who have been favored with a trial of its qualities.

The Autocar runabout, which made such a splendid showing last year, is, of course, to be continued, and work on a large number is well under way.

Waterbury's Pretentious Garage.

The E. H. Towle Co., of Waterbury, Conn., have recently moved into their new building on Harrison avenue, which is without doubt one of the finest appointed and equipped salesroom, storage and repair establishments in New England. The building is absolutely fireproof and has a capacity for storage of fully 100 hundred vehicles; the repair shop is on the second floor. A finely furnished salesroom, entirely independent of the garage, is connected with the establishment, and the E. H. Towle Co. have already closed agencies for Waterbury and vicinity for Columbias, Locomobiles and Autocars.

Evidence of Whitlock Prosperity.

So greatly has the business of The Whitlock Coil Pipe Co., Hartford, Conn., increased, that it became necessary to enlarge the plant in order to give larger facilities for the manufacture of the concern's Whitlock coolers. Accordingly, an extensive addition has been erected, in the shape of a building 50x202 feet, two stories in height. This will give the company 20,000 square feet more room.

To Prevent Skidding.

With the season of ice and snow close at hand and its ever present danger of side-slipping on frozen or muddy roads, motorists are becoming interested in devices to overcome such troubles. The American agency for one of the best known foreign non-skidding tire covers, the Wallwork, has been secured by Charles E. Miller, the well known New York jobber. It is manufactured of narrow strips of chrome leather, made into a continuous strip by the metal plates that form the tread.

As can be seen in the illustration, these plates are placed in rows of three. The two outside plates have three ridges each to prevent side-slip, and the centre plate has arrow shaped ridges which will give a better grip on slippery roads. The cover is fastened to the rim by hooks which fit into slotted metal ends on each section of leather. The hooks have turned up edges that grasp the edge of the rim, and are held in place by the expansion of the tire. The hooks are made in three different lengths, to fit different sizes of tires. For very large tires a compound hook is provided.



When the plates in the centre of the cover are worn out, the cover can be renewed by plates made especially for that purpose, the repair plates being ridged the same as the regular ones. They are made with long nails which can be driven into the leather cover and riveted on the inner side. It is claimed that the cover causes very little dust, as no vacuum is formed under the tread.

The Washington Automobile Co., of Tacoma, Wash., the incorporation of which was noted in these columns last week, has secured permanent quarters at 108-710 Pacific avenue. The building is 50x100 feet, and will be fitted up in modern fashion.

Pope Ships His First "Pullman."

The Pope Motor Car Co.'s first "Pullman" automobile has been shipped abroad, where it will be exhibited at the Paris automobile show. The big but graceful Pope-Toledo is equipped with a four-cylinder engne of 50 horsepower, and in general construction and finish resembles the Pullman cars in use on the leading railroads.

Although three other cars have been sent to Paris, the enclosed touring car of the Pullman type will be the feature of the Pope exhibit. The tonneau has side entrances and seats five people, three facing forward and two backward. A folded table that can be let down between the seats is convenient for playing games, writing or serving luncheon. Inside the woodwork is natural mahogany, hand carved, while the upholstering is in pearl gray broadcloth. All the windows can be lowered into the framework, so the car is ideal for summer as well as winter use.

Why Homan Was Sorry.

Bewailing the sale of a new $1,350 1905 Rambler car seems a curious proceeding, but that is exactly what Manager Homan, of Homan & Schultz, New York agents of T. B. Jeffrey & Co., was doing last Saturday.

The first of the new Rambler touring cars, looking trim and attractive in its green coat, had but just arrived, and was scarcely set up when it was sold by one of the salesmen during Mr. Homan's temporary absence. The customer, in his eagerness to secure possession of the car, insisted on it being loaded up at once and departed with it: "And just think," quoth Homan, "we may not get another one for a whole week."

From the number of people who have been waiting the arrival of the 1905 line of Ramblers, it looks as though the success of the Kenosha machine in 1904 will be more than duplicated the coming year.

The Facts About the Chains.

In reporting the arrival in this country of the line of Brampton chains designed to fit the majority of American cars, it was made appear last week that during 1904 both the Winton and Olds lines were fitted with chains of that manufacture, when it was desired to convey that Brampton chains for use on Winton and Oldsmobiles had been available this year. As practically every one in the trade is aware, the chains for 1904 Wintons were specially made by the Whitney Mfg. Co. of Hartford, while on the Olds runabout Whitney cotter detachable chains were employed, and on the Olds tonneau Baldwin chains.

Corbin in New Quarters.

The Corbin Motor Vehicle Corporation, which has been occupying one of the Russell & Erwin factories at New Britain, Conn., has taken possession of the plant of the New Britain Knitting Co. The product of this big and affluent concern is well advanced, and will soon be ready for marketing; it will include both large and small cars.

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FREEZING PROBLEM SETTLED

Further Experiment Proves Wood Alcohol and Glycerine to be the Efficacious Mixture.

Since my article published in the Motor World of October 20, further investigation made to determine the relative good qualities of three anti-freezing mixtures have developed facts that place the water-cooled car beyond the point of risk or danger.

It has been found that some machines containing a very small amount of cooling liquid boil easily with alcohol on a mild day, but it must be stated, in connection with this, that the amount of alcohol used was greatly in excess of what is necessary for this season of the year.

In my own case, I added some 30 per cent more than a month ago, and within a few days found that I still had 20 per cent left, showing that the loss is not very bad from a financial standpoint with wood alcohol at 75 cents per gallon.

The use of glycerine added to water is advocated by many and used successfully. It destroys any rubber tube connections slowly but surely that there may be in the circulating system, but that is not a serious matter.

The percentage of glycerine required to meet a given temperature is very much larger than the percentage of alcohol required, and the cost is $2 a gallon, against 75 cents for wood alcohol.

It occurred to the writer that a mixture of alcohol and glycerine would, perhaps, after all, meet all objections best, and this has been tried.

The accompanying diagrams show the curves for the freezing of various percentages of wood alcohol added to water, a mixture of half alcohol and half glycerine added to water, and a mixture of pure glycerine added to water.

One peculiarity in these curves will be noticed at once; that the wood alcohol curve is nearly a straight line; that the efficiency of the wood alcohol and glycerine mixture in meeting freezing temperatures increases very rapidly with an increase of percentage, and at about 30 per cent is quite as efficient as the wood alcohol alone. This mixture is practically good for 10 degrees below zero.

The glycerine curve is nearer a straight line, but its efficiency increased very rapidly after passing 30 per cent; but it is seen that 30 per cent glycerine will freeze at about 15 degrees F., and that to be safe for 10 degrees F. below zero, somewhere in the neighborhood of 55 per cent will be necessary.

The other diagram shows the boiling points of the three compounds. In boiling, a mixture of glycerine and water behaves very differently from the others—the glycerine raises the boiling point of water only about one degree, no matter what percentage may be added up to 50 per cent.

Pure glycerine boils at about 330 degrees F., which point is so far from that of the boiling point of water that the glycerine behaves entirely independently, and the water boils, leaving the glycerine in a perfectly liquid state.

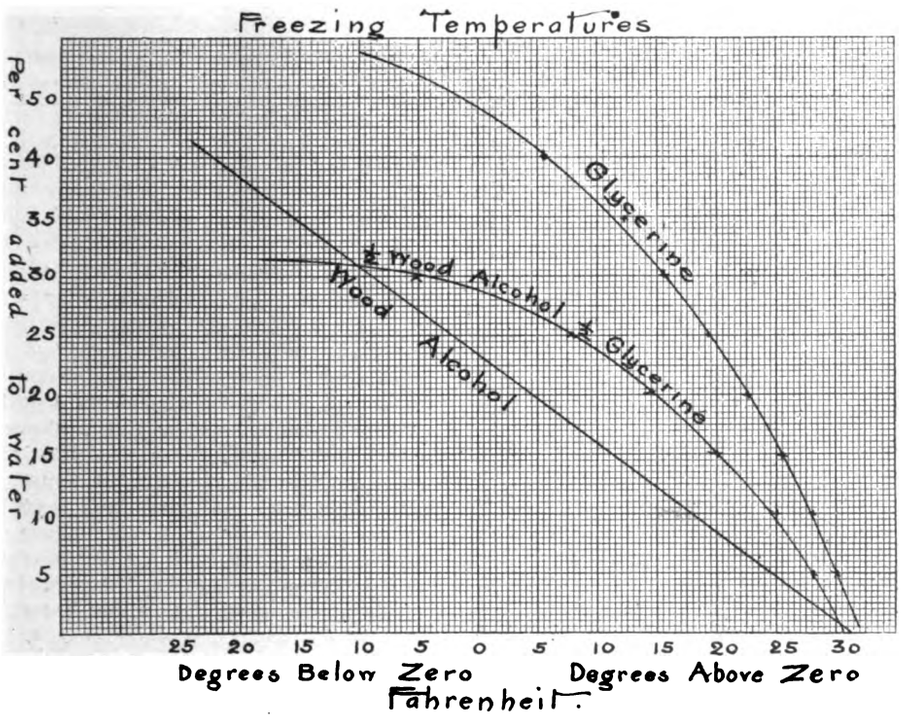
The mixture of half wood alcohol and half glycerine is decidedly better so far as boiling is concerned with the pure alcohol mixture.

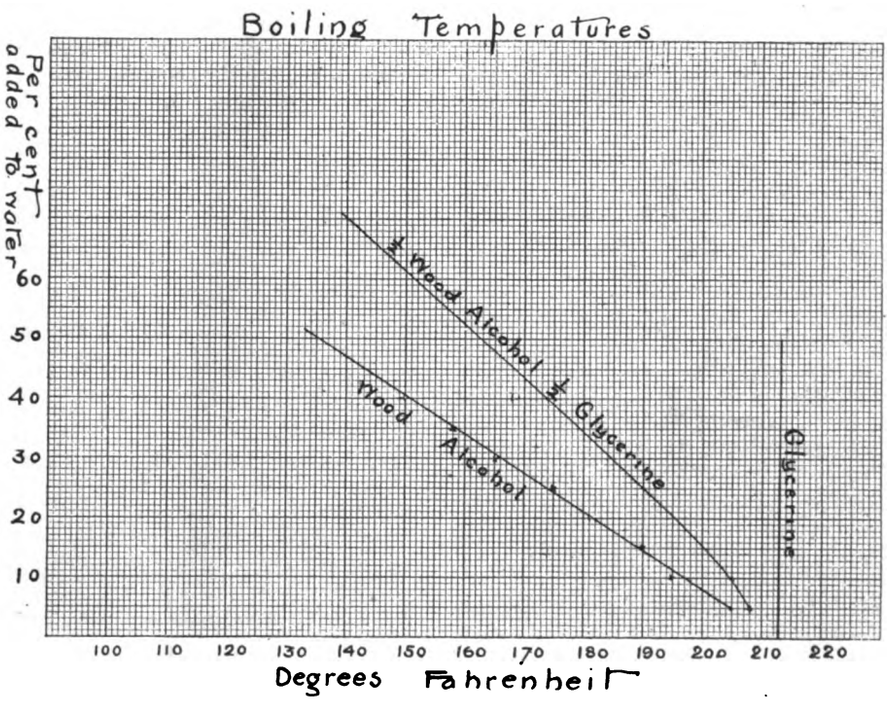
From these results, it is seen that the half and half mixture with water is very good as far as freezing is concerned, and, also, fairly good as to boiling.

It, therefore, seems to me that if the half and half mixture is used, the operator will get the best results adding a small quantity of wood alcohol from time to time, as the weather gets colder, to reduce the freezing temperature. The glycerine will stay there all the time as a constant without loss, and insure against any moderate freezing temperatures.

If all glycerine is used, then a very large percentage is seen to be necessary. It is scarcely worth while to add less than 35 or 40 per cent, which will suffice for 5 degrees or 10 degrees F.

There is certainly no reason, with these data before one, why a water cooled machine should not be run in any weather, and even left in a cold barn throughout the entire winter. It fairly may be said that the freezing problem is settled. HENRY SOUTHER.





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DEMONSTRATING THE DUNLOP

Novel Town-to-Town Method Employed to Bring the Tire Before Users and Dealers.

One of the most genuinely novel methods of exploiting the merits of a tire and of getting in touch with both the user and the dealer has been adopted by the Hartford Rubber Works Co., and is now being employed with marked success. The plan consists of giving town-to-town demonstrations of the new quick detachment Dunlop tire, demonstrators being sent in automobiles over different routes to give practical exhibitions of the tire's ease of manipulation.

Three crews have been sent out on these expeditions, emanating, respectively, from the home office at Hartford and the branches at New York and Boston. The first crew, in charge of "Teddy" Edwards, has been covering Connecticut, and may extend its operations to Western Massachusetts. Harry Snyder generalled the expedition starting from this city, and Manager E. R. Benson of the Boston office has looked after the "Down East" demonstrations.

The modus operandi is simplicity itself. The route having been laid out, the way was prepared by sending small advertisements to the papers in the various towns, stating, in the case of the New York campaigners, for example, that Harry Snyder would appear at the store of So-and-So (mentioning a prominent dealer) on a specified date, to give demonstrations of the ease with which the Dunlop tire could be detached, repaired and replaced. In Snyder's case, the attractiveness of the announcement was enhanced by the statement that the famous record breaking Columbia car in which Holcomb, Duffie and Bald drove from Chicago to New York in 57 hours was being used by the demonstrators, and that it, too, would be on view. It will be recalled that this car—Betsey II, as it was christened—was shod with Dunlop tires when it made its historic trip, and the remarkable ease and quickness with which repairs were made was commented on in these columns at the time.

At the announced time Snyder would be ready to go to work. He and his assistant would jack up one of the wheels, deflate the tire, remove the cover—having first loosened one of the endless rings by means of the turnbuckle—and take out the inner tube, then, having repaired an imaginary puncture, the process would be reversed and the tire inflated. Time and again the work was done in from ten to twelve minutes. These demonstrations are supplemented by similar ones with the small, nickel plated rims and tires which the demonstrators carry with them and which can be handled by any interested motorist without soiling his hands. A closer inspection of the construction of the rim and tire is also rendered possible by this method.

Everywhere these exhibitions have been attended by crowds of interested motorists, and hosts of friends have been made for the tire, both among users and dealers. Many of both classes know something of the tire, either from seeing it at the shows last winter or from the description in the Motor World. The practical demonstration on a car, and the knowledge that they were driven from Chicago to New York in record time almost without mishap, answers the question of practicality, which many were disposed to raise when seeing how simple and easily manipulated the tire was in its sample form.

The course mapped out for "Betsey II" included such places as Jersey City, Newark, the Oranges, Summit, Morristown, Bloomfield, Elizabeth, Plainfield, Passaic and Paterson in New Jersey. A side trip will be taken to Mount Vernon, New Rochelle, Yonkers, Tarrytown and other near New York places, which will fill in the time to December 1 or thereabouts; the car will then be sent to New Brunswick and Red Bank, N. J., thence to Philadelphia. With that city as a centre, Southern New Jersey and Eastern Pennsylvania will be covered, and perhaps Delaware and Maryland.

Thieves Worked Telephone Trick Successfully.

Louis Barg, an automobile dealer in Third avenue, Brooklyn, has made a firm resolve never to oblige strangers again unless they come armed with a pocketful of authentic recommendations. Barg was about to close his store last Wednesday night, when a well-dressed man entered the store and asked permission to use the telephone. Barg had no telephone, but pointed to a store on Seventy-ninth street where there was one. The polite stranger begged the automobile man to go to the 'phone for him, claiming that his hearing was defective. When Barg returned to the store he saw his $1,000 automobile speeding down Third avenue with two men in it. With the automobile were taken four bicycles, three cameras, five phonographs and several musical instruments.

How Miner Hopes to Sell a Car.

S. A. Miner, the Hartford (Conn.) dealer, who will next year handle only the Knox car, has hit upon a novel method of demonstrating the reliability under all conditions of the Springfield-made vehicle. He is answering all fire alarms with his yellow Knox 'bus, and proposes to do so all winter. The Springfield Fire Department has recently bought a Knox combination wagon, and Captain Miner hopes to sell the Hartford department a Knox car for Chief Krug. The chief and several of the commissioners are kindly disposed, it is said.

Becraft Buys Out a Rival.

The Inter-Mountain Automobile Co., of Ogden, Utah, has been purchased by L. H. Becraft, of the same place. He will combine the business with his own, and conduct it under the style of L. H. Becraft Automobile Co.

WONDER-WORKER IS SECRETED

And the Friends Who were to Share Millions are Now at Each Other's Throats.

Litigation involving many complex and disputed points is being waged by a number of Los Angeles (Cal.) men in the courts of that city. The patents and inventions of Charles R. Twitchell are the bone of contention, relating to a rotary gasolene engine and transmission gearing which have been applied to automobiles.

Six suits have been commenced by Twitchell against The Brown-Winstanley Mfg. Co. of Los Angeles. Twitchell seeks to restrain the company from using plans which he alleges are his private property.

It is claimed by the plaintiff that on June 22 the corporation entered into an agreement with certain of the defendants by which plant for a rotary gas engine invented by Twitchell, and for which a patent had been applied for, and also plans and patent for certain running gear for automobiles devised also by Twitchell, were to be turned over to a new corporation to be formed later. But an automobile was to be built to test the practicability and utility of the new devices, and the transfer of the patents and the new machine was to be on the following terms: Twitchell was to superintend the drawing of all plans and the building of the automobile from which so much was expected, and his services were to be paid for by the new company at the rate of $5 per day. If the automobile proved to be a practical and merchantable affair the new company—being merely the persons named acting together for a common purpose—was to incorporate with a capital stock of $100,000.

But disagreement arose. Twitchell was displaced from his position as superintendent and A. P. Fleming was installed in his place. Now Twitchell is asking that the Brown-Winstanley Mfg. Co. and the other defendants be restrained from utilizing the plans turned over by Twitchell. He avers that the automobile in embryo has been packed away in an inner room at the company's premises, and the plans are secreted, the place being kept under lock and key.

Twitchell has found support among some of the stockholders, who have brought independent suits either for recession of contract or to recover money paid for stock. James M. Brennan sues the corporation to recover $5,687.50, alleged to have been paid for 250 shares of stock, and it is made cause of complaint that Twitchell was displaced and Fleming put in. In a second suit the same plaintiff, acting for himself and all other stockholders, claims that in the transfer from one company to another the consideration was set out to be $25,000, when, as a fact, only $2,500 actually changed hands. He claims a balance due of $23,000.

D. Moran, also a stockholder, brings two separate suits, alleging excess charges for commission and advertising amounting to $3,967.64, for which he asks judgment, and a restraining order to stop the corporation from going ahead under the agreement.

C. R. Twitchell winds up the series of suits with one against the Brown-Winstanley Co., claiming that the assignment of the drawings, plans, etc., were made under misapprehension, and asking that the assignment be declared null and void.

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OLDS AGENTS IN CONFERENCE

Representative Gathering in Detroit—Entertainment Liberally Intermixed with Business.

Detroit, November 15.—There is "something doing" at the Oldsmobile factory this week. Of course, it usually is a busy place, but such comings and goings as have marked the last two days are not frequent. The activity is due to the first annual conference of the chief Olds agent in not only this country, but in Canada and even England. Every part of the United States is represented, not excepting California, Utah and Kansas.

Just what it is purposes to accomplish, and without regard to the goodwill that will be generated and the memories of a good time retained, is shown by the following programme of the "convention":

Tuesday morning and afternoon, November 15—Demonstration of 1905 cars; consultation with department managers; luncheon in general offices.

Tuesday evening—Banquet at 8 p. m. at Russell House; flashlight photo of the group.

Wednesday, November 16—Demonstration of commercial and other vehicles; trip in Oldsmobiles around city, concluding with luncheon at Country Club, Grosse Point.

Wednesday evening—Theatre party at Temple Theatre.

Thursday, November 17—Special train trip to Lansing factory.

Among those present "and accounted for" up to Tuesday noon are the following:

Palmer Abbott, New Orleans; Adams & Hart, Grand Rapids, Mich.; J. W. Lippincott, Little, Rock, Ark; F. G. Robinson, Albany, N. Y.; George Paddock, Newark, N. J.; O. L. Barringer, Charlotte, N. C.; R. N. Tannahill, Greenville, S. C.; T. A. Bryson, Savannah, Ga.; I. R. Gardinier, Utica, N. Y.; A. F. Chase, Minneapolis, Minn.; John W. Chester, Nashville, Tenn.; Carl Fisher, Indianapolis, Ind.; F. E. Gilbert, Jacksonville, Fla.; W. C. Jaynes, Buffalo, N. Y.; Hubert Levy, Louisville; J. A. Kline, Harrisburg, Pa.; F. L. Lockwood, Jackson, Mich.; F. L. C. Martin, Plainfield, N. J.; R. D. Martin, Plainfield, N. J.; C. F. Mason, Davenport, Iowa; H. S. Turner, jr., St. Louis, Mo.; E. P. Moriarty, Kansas City; J. C. Wood, Washington, D. C.; A. W. Norris, Saginaw, Mich.; C. H. Johnson, Atlanta, Ga.; Walter L. Githens, Chicago; H. A. Githens, Chicago; Percy Neal, Philadelphia; Sreten Stankowitz, Philadelphia; Ralph Owen, Cleveland, Ohio; A. Aubel, jr., Akron, Ohio; F. E. Avery, Columbus, Ohio; M. J. Adams, Coshocton, Ohio; J. P. Forbes, Coshocton, Ohio; Earl Kiser, Dayton, Ohio; C. C.. Stoltz, Marion, Ohio; C. R. Bowersox, Bryan, Ohio; Frank Palmer, Battle Creek, Mich.; E. P. Brinager, San Francisco; Mr. Bohnet, Lansing, Mich.; Mr. Koller, Reading, Pa.; Reed & Johnson, Coldwater, Mich.; J. J. Mandery, Rochester, N. Y.; Cowan Rogers, Knoxville, Tenn.; Jacob Roth, Erie, Pa.; C. F. Stele, Alpena, Mich.; Chas. Letts, London, England; S. D. Updegraff, Williamsport, Pa.; John Van Benschoten, Poughkeepsie, N. Y.; R. W. Whipple, Binghampton, N. Y.; L. C. Snow, Salt Lake City, Utah; Hyslop Bros., Toronto; Joseph Maw, Winnepeg; Knapp & Kramer, Hudson, Mich.; H. L. Keat, Portland, Ore.; H. H. Schollenberger, Wichitaw, Kan.; Mr. Monasco, Monroe, La.

Brisk Demand for Boston Space.

There is a brisk demand for space at the Boston Automobile and Power Boat Show, which is to be held in Mechanics' Building March 13 to 18, by the Boston Automobile Dealers' Association. All of the large building is to be used for the show with the exception of Paul Revere Hall, and a large part of the 79,000 feet of space has already been taken.

The building has been divided into five sections: A, the main floor of grand hall; B, the main floor of exhibition hall; C, exhibition hall balcony; D, the basement under grand hall, and E, the basement under exhibition hall. In Sections A and B, where the main exhibit of automobiles will be held, nearly all the space has been disposed of.

Non-Slip Devices Claim Attention.

The Fisk Rubber Co. has taken out a license to manufacture the "Bailey Won't Slip" tread, and will add that tread to both their regular and heavy car type motor tires and all standard sizes. The Fisk people will also hereafter furnish the Sampson protector or leather tread. The B. F. Gooddrich Co. and the Diamond Rubber Works have also taken licenses under the Bailey patents.

Berkshire Gets a Building.

Its quarters in Cottage Row, Pittsfield, Mass., being inadequate, the newly organized Berkshire Automobile Co. has leased a building on Renne avenue and will remove to it at once. Only part of the building will be occupied at present, giving 5,000 feet of floor space. The concern will manufacture three types of cars, and is said to have a number of orders for them on hand.

First Northern Reaches New York.

The first 1905 Northern touring car reached the store of Peter Fogarty, the New York agent, in Thirty-eighth street, last week, and its smooth running evoked many an approving nod from the shops that line that automobile thoroughfare. "Quiet as an electric," was the general comment, and the general verdict was that it would prove a ready seller in this vicinity.

Benz has a Bad Year.

The year just ended has been a disastrous one for the old-established German house of Benz. The concern has incurred a loss of $140,000, due largely to the expenses incident upon the complete change in patterns which took place. The prospects for next year are said to be much better.

MUST PAY DUTY TWICE

An American Tourist Has an Expensive Awakening—The Points Involved.

A decision handed down by the Board of General Appraisers on Tuesday last made clear the not generally known fact that automobiles of foreign manufacture are liable to be assessed the regulation duty of 45 per cent every time they are brought into this country. It is only when they have been in use abroad for at least one year and are then brought back as household effects that the tariff exaction is waived.

The decision was rendered as the result of a hearing on a claim made by J. T. Hillhouse for rebate on a car of foreign make. This car was valued at 10,000 francs ($2,000), and assessed 45 per cent ad valorem. The duty was paid and a claim for rebate filed. In this claim Hillhouse asserted that the car should have been admitted free. His first claim was made under paragraph 483, which covers goods of American manufacture exported and then imported. He also made a claim under paragraph 504, which covers household effects. Still another claim was based upon the fact that the automobile had been imported in 1902, exported in 1903 and reimported in 1904.

When the case came to trial no evidence was produced to support the claim that the car was of American manufacture. Indeed, it was admitted that it was made abroad; that it had been brought into this country and 45 per cent duty paid on it, and that it was then taken to Europe once more, only to be again brought back to this country. The claim made that it was, on this second occasion, brought back as household goods was not substantiated. On the contrary, it was shown that the car had not been used abroad for one year, as required by law, and it was not therefore entitled to come in duty free.

The final claim, viz., that having once paid duty it was exempt thereafter, is without warrant in law. General Appraiser Somerville, who wrote the decision, said:

"Foreign goods once lawfully admitted into the United States, if re-exported or voluntarily placed within the limits of foreign jurisdiction, lose the character imparted to them by such admission, and if reimported into the United States are regarded as new importations subject to the laws governing imported merchandise."

It was said at Judge Somerville's office in this city, in response to an inquiry put by a Motor World representative, that the courts had decided finally and in a number of decisions that foreign goods were liable to assessment at the regular figures when brought here, no matter whether they had once paid duty or not. This is now, it was said, a well established and incontestable point of law. The only exception to the ruling was where a car had been brought in as household goods, having been, as already stated, used at least one year abroad. In the Hillhouse case it was less than a year between the shipment to Europe and the return to this country. Had the required time elapsed the car would not have been dutiable.

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HIRED MEN NOT AMATEURS

Messrs. Wallace and La Roche Discuss the Subject and Agree in this Opinion.

"I believe the time will come when there will be amateur and professional classes established for track racing, but am hardly prepared to say that such a rule should be established at the present time," said William Wallace, of Boston, one of the racing committee of the American Automobile Association, to a Motor World man on Tuesday last. Mr. Wallace was seen at the garage where he stores his 90 horsepower racer when he visits New York. He talked while he stood beside his huge machine, his sleeves rolled up and his hands covered with oil. Mr. Wallace's views on the subject are full of interest, and in many respects distinctly novel. They make it appear that he is not possessed of that burning desire for an amateur rule that previous alleged interviews had represented to be the case.

"So far as the big road races are concerned," he said, "the amateur who goes into them must take his chances with the professional drivers. It would be a very difficult matter to draw a line in international contests owing to the fact that the best drivers of one country might be professionals, while those of another might be amateurs. I do not think there is as much danger in road races as in track contests, and that is one reason why, in my mind, there is less need for an amateur rule in road contests.

"Track racing is very dangerous, and with the multiplication of heavy, high-powered racing machines, it will become more risky than ever. To acquire the knack of making the turns on a mile track at high speed, constant practice is required. The professional who does nothing but race will have plenty of time to become accustomed to fast work on a circular track, while an amateur who has his business to attend to will not have time to become as proficient as the man who is hired for such work by a manufacturer. When an amateur and a professional meet in a race, the latter will have a great advantage over his opponent. It is more than likely that he will take greater chances of accident than an amateur would, but he would be endangering his opponent as well as himself in the majority of cases.

"I am not much of a believer in track racing for amateurs, particularly at meets run by professional promoters. It seems to me that it is undignified for amateurs to compete in events run by men whose sole object is to make money from the spectators who are attracted by the racing. Meets that are run by automobile clubs to provide funds to pay for clubhouses or other necessary expenses are different. I competed in two such meets myself this year, those run by the automobile organizations at Boston and Providence. My feeling in this respect is much the same that has prompted me to ride in steeplechases at country clubs but which prevented me from appearing in such contests at tracks where professional jockeys competed and the gate money went to a professional promoter or promoters.

"The amateur question has not been considered by the racing committee of the American Automobile Association at any of its meetings, but we may get around to it later on. It will be worked out some time, but I have not given it enough thought to be able to say how soon a new rule will be made."

Though Mr. Wallace has no decided views regarding the subject, F. A. La Roche is fairly charged with them.

"I have not retired from track racing, as has been reported," he said when approached, "but, on the contrary, I am ready to meet any gentleman sportsman who thinks he has a faster car than mine. But I absolutely refuse to compete against a hired chauffeur in track contests.. I have a fast car, which is my personal property and is not owned by the American Darracq Co., and when I race I do it for the sport there is in it, not for gain or advertising. If I had been looking for advertising I would have entered a car in all of the track meets here this year and in the Eagle Rock Hill climb, but I have not done so. There is another 80 horsepower racing car on the way here, a duplicate of the one that Mr. E. M. Steck, of Philadelphia, expects to drive at Ormond, and I will race it against Mr. Partridge or Mr. Birdsall at any time—but not against any of their hired men. Some of these fellows who are driving big racing cars at present, in my opinion, should not be allowed on the track. In their desire for pecuniary gain they are making competition too dangerous, and unless something is done in the way of drawing a line and keeping them on one side of it track racing will not be of very long life."

No Hired Men in this Contest.

India has its amateur question, too. It has come to the front in connection with the approaching Delhi-Bombay trials, and the amateur driver is defined by the secretary of the Motor Union of West India, who says:

"The committee desire that the trials should be open to all cars, but such cars must be entered in the name of a private individual, and not by a firm of motor car dealers or manufacturers.

"All cars must be driven by amateurs—that is to say, not by a motor mechanic or chauffeur. Any member of a motor firm who is not paid for driving, and is understood to be an amateur driver in English motor circles, would be permitted to enter and drive a car."

Charles J. Glidden, of Boston, lectured last Monday night in the schoolroom of the Church of the Intercession, New York, illustrating his talk with many stereopticon views of the countries he has travelled through. The next day he began preparations to sail for the Fiji Islands, where he will resume his automobile tour around the world.

FOUR CARS ON A FERRY

New Ruling Issued in Right Spirit and Proves a Not Unreasonable Precaution.

Considerable surprise was expressed by New York motorists last Saturday when the announcement was made that but four gasolene automobiles would be allowed at a time on any of the Staten Island ferries. The order limiting the number of cars also made the positive rule that the machines must be placed at the stern of the boat, so that they could be easily pushed overboard in case they caught fire. No prohibition was placed on electric machines, but cars "propelled by gasolene or oil" were included in the order. According to the United States law, the company could refuse to carry any automobiles at all, but the order limiting the number provoked much curious comment.

It was at first reported that the order was issued on account of the large number of automobile parties who used the Staten Island boats on their way to witness the football game at Princeton. This, however, was a mistake, as the order had been issued the previous day. At the company's office, it was intimated that the new rule was made on account of the libel which the United States District Attorney had filed against the ferryboat Texas, which plies between New York and Brooklyn. The impression seemed to be that the Texas was tied up pending the result of the suit.

"We cannot afford to have any of our boats tied up, as we need them all every day," said one of the Staten Island ferry officials. "They are all wooden boats, too, and naturally the company does not care to run any risk of fire on them. We do not think the order will work any hardship on automobilists, as it is very seldom that more than two automobiles have been carried on the same boat at once. We hope that no inconvenience will result from the enforcement of the new regulation. If at any time there is a club run or anything of that sort, we will be glad to put on an extra boat if we have a little previous notice. When putting on an extra boat that will carry no passengers, it will carry as many automobiles as its deck will hold. It was unfortunate that the first day the order went into effect so many wished to use the ferries, but we took care of them by putting on two extra boats in the morning and one at night.."

The order was dated November 11 and was as follows:

"Effective this date, please arrange to limit the number of gasolene or oil propelled automobiles on any one boat to four, and they must always be loaded on the stern of the boat. This, with a view to greater safety in the event the gasolene or oil becomes ignited, when the automobiles would have to be run overboard in case the fire could not be put out on board., This order does not apply to electrically propelled automobiles, which, however, should be put on the boat ahead of the gasolene or oil automobiles, so the latter could be more readily handled and be out from under the deck in case of fire, so the danger to the boat would be less.

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SIMPLY HUMAN NATURE

How and Why the Desire for Speed is Aroused and Cautiously Satisfied.

"Almost every person who takes to automobiling soon becomes a victim of the speed mania by easy stages," remarked the manager of an uptown garage to the Motor World man one day this week, as he took two or three quick puffs on a black breva.

"The way beginners acquire the desire for speed closely resembles the development of the drug habit. A staid, respectable citizen--say, a banker or a lawyer, or even an editor, who, perhaps, is a vestryman or other pillar of the church—comes along and wants a nice respectable family car, one in which he can take the wife and children, or that the wife can be intrusted with in an emergency.

"'Do you want one that can jog along at a pretty good clip?' I will ask him.

"'Oh, no. Speed is no factor!' Mr. Prospective Purchaser invariably replies.

"Well, I sell him the machine he describes --probably an electric runabout that will run fifteen or twenty miles at the outside—and he goes away perfectly satisfied. The first time he goes out somebody, perhaps his next-door neighbor, whizzes by him with a 'toot toot.' The owner of the electric throws the lever out another notch, but it's no use, he can't catch up to his neighbor. The next day he is back to see me.

"'Now, understand me; I don't want a racer, but I would like a machine to show a little more speed, if necessary.'

"I give him a gasolene car of 8 or 10 horsepower, and some neighbor in a 'Red Devil' passes him on an upgrade.

"Again he returns.

"'I want a machine that can climb hills faster,' is his plea as he inspects a car with motor power enough to drive a steamship. He is up to about 40 horsepower by this time, and when next he travels down a road it's 'Vestryman first; subway express also ran.'

"If anybody can give him the go-by, I sell him one of the 70 'elephant-power' snorters with wheels the size of an Ocean Grove straw hat. But all the time he stoutly maintains that he isn't in the racing game. Of course, he doesn't go out to travel ninety miles an hour on the average, but he wants to be there with the speed should some envious neighbor develop a desire to show him a rear-end assortment of license tags. There's a deal of hypocrisy displayed on the subject by editors, lawmakers and judges alike. It is human nature to desire swift motion, and we all know it, although not all are willing to admit it."

Thus ruminated the dealer in his desultory fashion until he was called away to wait on another customer.

The Pope on Scorching.

Now that the Pope is a motorist he takes a lively interest in everything that relates to automobiles. It is related that he recently settled in a satisfactory manner a problem that was propounded to him.

A Belgian priest laid an inquiry before him as to whether he could conscientiously give absolution to a chauffeur who had confessed to having run over a man while going at illegal speed, but who would not promise to keep within legal pace in the future. The Pope's reply was to the effect that absolution was to be withheld from every motorist who did not express the firm intention of preventing all possible future accidents.

"But," so runs the Papal dictum, "on the other hand, the father confessor cannot demand the exact adherence to police regulations on the part of a chauffeur. Such regulations are subject to alterations. It cannot be admitted that a man commits a deadly sin on Belgian territory, and does not commit it when he drives at the very same speed on Dutch soil."

Barred from a Boulevard

Automobiles are prohibited from using the Bear Creek Boulevard, near Wilkesbarre, Pa., by the owners of the road, and the matter will be taken to court by members of the Wilkesbarre Automobile Club. As the road is one of the most attractive in that vicinity, the refusal of the road's owners to allow automoiles to use it is very distasteful to local motorists. Several members of the local organization drove to the tollgate of the road in automobiles last week and demanded that they be allowed to ride over the road, offering any price for the privilege. It is said that they were told they would be shot if they tried to pass the tollgate.

NOW BLAMES HIMSELF

Reflection that Convinced One Motorist that he Could Have Avoided Trouble.

"This has been my first year with an automobile," remarked a sensible motorist the other day, "and I want to tell you that I have learned a few things since I started in.

"I have learned in the first place that an automobile, like anything else, is liable to get out of order, unless you care for it. It is no perpetual motion affair or an eight-day clock that you can wind up Saturday night and expect to keep a-going until the next Saturday night.

"There is just one maxim that I shall carry with me next year, when I buy my new machine, and that will be, 'Be sure everything is all right before you go ahead,' or words to that effect Now, when I review the few slight breakdowns that I have had this season (and they have really been very few) I can trace them to one cause—carelessness. I have been so anxious to get there that I have not even taken the trouble to look over my car before I started. I can see now where five minutes' inspection before starting would have saved me every slight inconvenience that I have had out on the road."

Will be Entertained at Knight's Farm.

The last run of the Rhode Island Automobile Club for the season will be held to River Point Saturday, November 26, when the club will be entertained by C. Prescott Knight at his farm. There will be the usual hill climbing contest. There will be several silver cups put up for the winners of the four classes, electric, steam, gasolene cars, valued under $1,500 and gasolene cars valued over $1,500.

When Long Islanders Will Eat.

The Long Island Automobile Club will discuss its annual dinner on December 21. The club is now well settled in its new house at No. 360 Cumberland street and already the storage facilities are overtaxed. Much needed relief has been obtained by securing accommodations for ten more cars in the adjoining building.

IF TIRES COULD TALK.



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Notables Who "Saw the Town" in Motor Cars.



Springfield, Mass., entertained some distinguished guests last week, chief among them being Baron Kentaro Kaneko, of Tokio, Japan. The Baron formed one of a party taken in hand by the Board of Trade of the Massachusetts town and shown the principal places of interest. Automobiles were, of course, made use of to transport the party, and the illustration shows the visitors comfortably bestowed in two of the new 1905 Knox cars as they appeared in the United States Armory grounds.

Baron Kaneko is seen in the car on the right, President Bowman of the Board of Trade being next to him, while the Baron's secretary, Tokutaro Sakaii, is next to Mr. Bowman. In the car on the left are Paul Rhodes Hawkins, of the reception committee, on the front seat; on the rear seat are Mayor Stone and George H. Daniels.

Alcohol vs. Gasolene.

While gasolene contains more available heat energy than alcohol the efficiency of the alcohol engine is higher than that of the gasolene engine, the result being that volume for volume gasolene is about one-eighth more efficient than 90 per cent. denatured alcohol containing only 2 per cent of benzine. Having regard to the fact that the alcohol thus compared contains 10 per cent of water, the difference in this respect is so small as not to be worth very serious discussion. Up to quite recently a water-white alcohol of about 97 per cent strength could be bought at about 18 cents per gallon in Germany. Gasolene costs about 20 cents per gallon.

Need of Chain Protection.

Designers of cars driven by side chains and engines placed in front are obliged to bring considerable ingenuity to bear when planning side entrances. The chain and sprocket wheel are usually in the way of a person entering the back of the car, and unless they are protected in some way they are considerable of a nuisance. There is always some oil or grease on the chain, and in dusty weather it becomes encased with a gummy mixture that is the reverse of inviting.

One or two makers have remedied the trouble by encasing both the sprocket wheel and the chain, thus improving the appearance of the car as well as preventing soiled clothes. It may be that this will prove the entering wedge and result eventually in removing from sight the naked chains and sprocket wheels that are now obtruded unnecessarily on even the most expensive cars. Such a consummation is desirable from a number of standpoints, and may be nearer at hand than is generally supposed.

Daimler Enters a Denial.

An emphatic denial is made by the Daimler Co. of the report that it will next year place on the market a Mercedes car with a three-cylinder engine. The denial is printed by The Car, London, Eng., which gave space to the original statement, with the tart comment that time will show which is wrong the report or the denial. The inference is, of course, that the report is true.

Remedy for Burns.

A valuable remedy for burns is a strong aqueous solution of picric acid. This at once removes pain and to a great extent prevents blisters at the expense merely of dyeing the affected part for several days to a color that will probably match the wheels of the car.

Swiftness in Philadelphia.

An automobile street car line, which runs between the Pennsylvania Railroad station at Fifty-second street and Merionville, is the latest mode of transportation offered to Philadelphia suburbanites. The rolling stock at present consists of two auto-cars, which measure 18 by 7 feet. The seats, of which there are eight, are upholstered with rattan and have brass corner handles for the accommodation of standing passengers. The cars are lighted by electricity and heated by steam, which is generated from the water used to cool the cylinders of the gasolene engines that move the vehicles.

Oregon has an Auto-Despatch.

At Portland, Ore., a company has been formed to enter the business of carrying freight and passengers by electric automobiles. The name of the new concern is the Oregon Auto-Despatch, and the following gentlemen were elected officers: President, H. W. Goddard; vice-president, E. E. Lytle; secretary, B. W. Gage. Dr. B. E. Miller, C. A. Bell and the officers make up the board of directors. The company has contracted for several freight trucks and one passenger coach, and they expect to have them in operation by the first of next year.

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FARSON RE-ELECTED PRESIDENT

Chicago Club Ignores Consistency and Choses Tag Ordinance Fighter for its Head.

Consistency, or the lack of it, does not trouble the members of the Chicago Automobile Club. They re-elected John Farson president last week, unanimously and with a great show of alacrity and spontaneity, thus unreservedly indorsing, by implication at least, his splendid stand against the efforts of Chicago officials to bring him under the yoke of tags and licenses. Apparently, they have repented of their action in bending the knee and unconditionally surrendering the position boldly taken by Farson—an action hastily taken when he was out of the city, and, on that account, unable to keep the wobbly members in line.

The white-winged dove of peace hovered over the clubhouse on November 10, when the annual meeting and election of officers took place. This ticket was elected without opposition:

President, John Farson; first vice-president, Ira M. Cobe; second vice-president, W. G. Lloyd; secretary, Sidney S. Gorham; treasurer, Charles L. Furey. Board of directors—F. C. Donald, T. J. Hyman, B. H. Marshall, Robert Tarrant, jr., Harold F. McCormick and Dr. Davis.

In a post-election speech President Farson defined the position of the club as being in favor of:

Abolition of city licenses.

Better streets in downtown district.

More careful sprinkling of streets throughout city.

Better country roads.

Signboards at all crossroads.

He announced that the two latter needs would be set forth in bills to be presented to the next State legislature.

He commended the club for the "vigorous resistance it has made to unjust legislation affecting the rights of automobilists," at which neat bit of irony some of the vertebraless members must have winced. He announced that during the year the membership of the club had increased from 139 to 515, making it the largest automobile club in the country.

After the meeting the project of erecting a fine new clubhouse was taken up in a manner that gives some tangibility to the scheme.

"While I cannot go into details now," said President Farson, "definite plans for a new clubhouse are already in mind. The building will be the finest devoted to the interests of automobilists in this country. It will be an ornament to Chicago and a model of its kind." He said in conclusion that it was partly with the new house in mind that the dues of the club had been raised from $25 to $50.

Last Meet of the Season.

Seven events will make up the programme of the race meet which the New Jersey Automobile and Motor Club of Newark will run on November 19. The races will be run at the Waverly Driving Park, near Newark, and no admission will be charged. All of the contests will be for stock cars, classified according to price. There will be three contests at three miles, the cars being classed as follows: Between $500 and $700; between $700 and $950, and between $950 and $2,000. The fourth event will be a five-mile handicap for a cup donated by Frederick R. Pratt, president of the club. The sixth event will be a three-mile contest for touring cars, carrying four passengers each. The seventh event is to be a ten-mile, free-for-all, for cars costing not more than $6,500, for a cup donated by B. M. Shanley.

'Frisco Eases Ferry Burden.

Motorists who use the ferries of the Southern Pacific Co. to cross San Francisco Bay are no longer compelled to empty the gasolent tanks of their machines before they are allowed on the boats. Until recently this had been the case, but, through the efforts of L. P. Lowe, chairman of the executive committee of the Automobile Club of California, the matter has been straightened out. Mr. Lowe wrote to the company's general manager, who replied that no such order had ever been issued. He said, further, that he would at once notify all employes that it was not necessary for the gasolene tanks to be emptied before the cars were put on the boats.

Woolson as Vermont's Enumerator.

W. D. Woolson, of Springfield, secretary of the Vermont Automobile Club, has compiled a list of all of the owners of machines in the State so far as he has heard from them. There are 215 on the list, but he estimates that the number of cars in the State is nearly 275, as many machines have been received recently, the names of the owners of which are not on the list. Following is the number of machines on the list in some of the largest cities in the State: Burlington, 38; Barre, 27; Brattleboro, 26; Bennington, 7; Montpelier, 7; Richford, 10; Rutland, 21; St. Albans, 4; St. Johnsbury, 16; Springfield, 4; South Londonderry, 4; Woodstock, 6.

To Down the Dust.

The first steps toward the formation of an important organization, which will probably be named the Society for the Prevention of Road Dust, were taken recently in Munich, Germany. There were delegates from the Bavarian Ministry, the Bavarian Automobile Club, the University, the Munich City Council and many learned men from other parts of Germany. Dr. Uebel in summing up his speech brought out the following points: That the best means to prevent dust lay in the improvement of road building; that dust could be done away with by impregnating the road surface; that the results obtained in using Westrumite have been so satisfactory that further experiments should be made.

TRIES BRAND NEW ORDINANCE

Lincoln Park Commissioners Make Fresh Move in Autophobe War—Farson's Tart Comment.

Believing, apparently, that it has not yet made itself ridiculous enough, the commissioners of Lincoln Park, Chicago, last week took the necessary steps to repair that omission. They passed a new automobile ordinance, one more draconian than anything yet proposed. The ordinance, which is declared to have been drawn with great care, and is expected to be also adopted by the West and South park boards, contains these provisions:

It prohibits the use of gongs, whistles, or horns.

It does not allow automobiles to emit smoke, vapor or offensive odors.

It provides for red lights and for a white light, which shall make the number of the machine clearly visible.

It requires a special registered number, not necessarily the same as that provided by the city ordinance. The numbers must be not less than five inches high and five-eighths of an inch wide at every point, and shall be spaced at least three-quarters of an inch apart. They are to be displayed on the rear of each machine, as near as possible to its middle and low enough not to be hidden by the hood. The figures are to be "of bright metal or painted in light color" on dark backgrounds. The number placard must be so "attached to the machine that it will not sway in any direction."

The ordinance is, of course, worse—ten times worse, one prominent motorist characterized it—than the former one, on which such a fight has been made. It brought forth from President John Farson of the Chicago Automobile Club this characteristic and tart outburst:

"It is my private opinion, publicly expressed, that the Park Commissioners of Chicago should send their attorneys to the night law schools. Of all the silly, absurd, idiotic and ridiculous ordinances ever perpetrated by a set of men who are supposed to be intelligent, this latest legal farce-comedy is about the limit. And right here I want to remark that at the end of ten days, when this parody on an ordinance is supposed to become effective, I will have something to say.

"I don't know what action the club will take at the directors' meeting, but I do know that if I am still on earth I will take the matter to the courts and will beat that foolish ordinance in ragtime."

On November 19 the New York State Automobile Association will hold its quarterly meeting at Syracuse, N. Y. Several new clubs are up for election to membership.

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"Outlaw" Pickens Surrenders.

After an outlaw career lasting for many months, W. H. Pickens, who owns the famous old "999," has been forcibly persuaded to abide by the racing rules of the American Automobile Association. He had been defying the A. A. A. racing board for a long time by having the "999" appear at unsanctioned meets, and has been repeatedly accused of "faking" by irate promotors when the old racing machine refused to race. His conversion must have been very painful, as he was compelled to apologize for his many misdemeanors, sign an agreement acknowledging the authority of the A. A. A. and to pay a fine of $250. Pickens, his car and its driver, Jed Newkirk, were recently indefinitely suspended from all racing by the racing board of the A. A. A., and Pickens found himself unable to accept a match against Oldfield which was offered to him at Salt Lake City. By dint of much telegraphing he managed to have his suspension changed to a fine, which he at once paid.

Boston's "School" is Re-opened.

Registration for the Automobile School of the Boston Y. M. C. A., which opened last week, is very satisfactory, among the students being many prospective purchasers, who find the school of great benefit to them. The shop course opened Thursday evening, with over one hundred men in attendance, and the prospects for the season are most encouraging. As was the case last year, a number of ladies have enrolled and are much interested in the work of the school. Courses will meet on Monday, Tuesday and Thursday evenings throughout the winter.

End of the "Steel Road."

The wide steel rails which were laid on a section of Murray street, this city, about a couple of years ago have been taken up and removed. The street has had its Belgian block pavement replaced by one of small wooden blocks, chemically treated. The latter reach from curb to curb. Teamsters, especially when coming from the direction of the North River, will miss the steel track. It made easier traction than even the smooth wooden blocks can do.

Washington Talks Fight.

Automobilists of Washington, D. C., are planning to form a club in that city to fight oppressive legislation locally and in Virginia and Maryland. There are at present 852 automobile licenses in the District of Columbia, and the promoters hope to start the club with several hundred members. Whitman Osgood, A. L. Boyd, J. C. Wood and A. L. Cline are the movers of the project.

Postponed Until Spring.

It has been decided to postpone until spring the automobile race meet which was scheduled to be held at Denver, Col., October 29. Inability to secure sufficient entries so late in the season is assigned as the cause.

Little Truth in Alarmist Reports.

An alarmist report was sent out on Monday to the effect that Geo. Arents, Jr., who was injured by the overturning of his car in the Vanderbilt Cup race on October 8, had suffered a lapse of memory, due to the presence of a clot of blood on the brain. The report added that he had been removed from the Nassau County Hospital to the Garden City Hotel, in the hope that a change of residence would benefit him. Little improvement had taken place in the last week or two, and there was cause for great anxiety, the report concluded.

The next day Arents's physician came out with a denial of the story. The only truth in it is found in the fact that Arents's memory regarding the accident is a blank. On other topics it is perfectly clear. Said Dr. R. B. Kimball, the physician in question:

"The published reports concerning young Arents's condition are misleading and painful to his friends, in that they convey the idea that his mind or memory has been permanently impaired. As a matter of fact—and I saw him yesterday—he is recovering very rapidly. I am sure he will be able to attend to his affairs within a month or two, fully recovered. His mind is perfectly clear now, except that he does not remember the accident in which he was injured."

Good Effects of Vanderbilt Race.

"If no other purpose was accomplished by the Vanderbilt Cup race down on Long Island, the object lesson in dust allaying given it would be more than worth the money spent on it," remarked a motorist to a Motor World man on Monday.

"I happened to be on Long Island Sunday and drove over part of the cup course. It was readily distinguishable from the other roads in the vicinity, both from its color and its freedom from dust. The 15 or 18 feet strip of oil covered road appears to be in exactly the same condition as it was on October 8, when the cup race was run. Part of the way I drove behind another car, and, while there was plenty of dust before I came on the oiled road at Queens, there was not a particle of it afterward.

"It seems to me that it ought to be an object lesson to the people down there. Certainly, it has been shown that dust can be prevented."

Big Race in Australia.

Arrangements are being made for a great automobile race to take place in Australia in February. The course will be from Sydney to Melbourne, a distance of 575 miles. Mark Foy, a motorist of Sydney, has promised to provide a worthy trophy. This is to be competed for annually on much the same lines as the Bennett Cup.

The automobile party who selected and mapped out the course encountered some shocking roads. Several times they were bogged, and at one place they had to get the assistance of the inhabitants of a neighboring township to pull them out of a quicksand.

The Lay of a Lamp.

He entered one of the stores on Automobile Row, otherwise Thirty-eighth street, with a package under his arm. Addressing one of the salesmen, he inquired if the latter did not want to buy a lamp. Receiving a negative answer, he said:

"It picked it up on the road. It must have dropped off of some automobile. No one seems to want it, though," and he went across the street and entered another store. He met with no better luck there, however, as he emerged a minute later with the package still under his arm.

"That's a new dodge," said the salesman to the Motor World man. "I guess he picked it off of a lamp bracket, and somebody is mourning its loss now. Anyway, people along the row here don't want lamps so much as they want money just now."

Turned Down Mayor and Motorists.

By a vote of twelve to one with one member absent, the Joliet (Ill.) Council recently passed an automobile ordinance in spite of the Mayor's veto. The Mayor, backed up by the motorists of the town and Alderman Lagger, made a fight against the ordinance, and when it came up for its vote vetoed it. On a second ballot the Council passed it by a vote of twelve to one. The motorists will fight the ordinance, which has an eight-mile speed limit. They say that the eight-mile limit might do for a downtown district, but that outside of that a twelve-mile limit at least should be allowed.

Artillery Wants Automobile Instruction.

The president of the Royal Marine Artillery Technical Committee at Portsmouth, England, has requested the Automobile Club of Great Britain, "for the good of his majesty's service," to send a representative to conduct a theoretical and practical examination in motor car instruction some time next February, and also to grant suitable certificates to the members of the Royal Marine Artillery class who qualify in the examination. The automobile club has agreed to send a representative.

Says Thieves are Growing Wise.

Thieves are learning how to run automobiles, says the police of Indianapolis, and the prediction is made that owners of machines will soon have to cope with a new trouble. From the reports of stolen machines which are received from many of the larger cities, it is believed that thieves are stealing cars and selling them to dishonest repair men, much the same as was done when bicycles were thus disposed of.

Will Tax Already Tagged Car.

The Meriden, Conn., Board of Assessors figures that there are between $30,000 and $35,000 worth of automobiles in the town, on which they expect to levy taxes. Sixty cars are estimated to be owned, and less than one-half of them have been declared.

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THE LAUREL DECKED CARS NEARING THE END OF THEIR 3,000-MILE JOURNEY.

Three Thousand Miles in 30 Days.

That a car can be driven 100 miles per day for thirty successive days, over give-and-take roads and in all sorts of weather, and require but little attention during the time, was made plain in Great Britain last month. The British agents of the Oldsmobile—Charles Jarrott & Letts—conceived the idea, shortly after the British small car trials, of demonstrating the reliability and efficiency of these cars, and with that object in view mapped out a 3,000 mile route throughout England, Scotland, Ireland and Wales, and started two Olds car—a touring runabout and a tonneau—over it.

The self-set task was brought to a successful termination on October 27, when the two cars reached London. A large crowd had gathered to see them arrive, and professional photographers and even a cinematographer were also on hand to make enduring records of the event. The cars and their drivers looked much the worse for wear, but, barring extreme fatigue on the part of the latter, were in good condition. It is even stated that the cars could have been sent immediately on a second 3,000 mile trip had it been deemed advisable.

A great deal of excessively bad weather was encountered, and the roads were in many places in a terrible condition, particularly in Scotland and Ireland. Dense fogs and drizzling rains prevailed on a number of days, and as the roads were for the most part strange to the drivers, the latter frequently reached their nightly destinations utterly exhausted. Many narrow escapes from slips and encounters with frightened horses and other cattle occurred, and the tonneau car did go into a ditch and had to be pulled out by horses. Beyond some strains and the breaking of some bolts, however, the car was not harmed.

Estimate of Chicago's Interest.

It is estimated that there are in Chicago at the present time substantially 1,500 automobile owners whose cars are licensed and 500 owners whose vehicles do not as yet bear the aluminum tag which denotes the sanction of the city. There are thus approximately 2,000 automobiles in everyday use in Chicago. Of these, 875 are cars purchased this year of local dealers, representing a cost of $1,424,000.

The bulk of these machines are gasolene cars, there having been sold this year in Chicago about twenty-five steam and sixty electric vehicles, the latter principally for conventional city use.

This aggregate of 1904 sales represents American products, with the exception of about 2 per cent of foreign made cars, aggregating a cost of perhaps $75,000, the retail price of each being much more than the average price of cars sold.

Louisville Goes the Limit.

It has remained for Louisville, Ky., to cap the climax in the matter of proposed automobile legislation. One Abner Harris, by some freak of circumstance an alderman of that city, has introduced an ordinance that would be absurd if it was not outrageous. The maximum speed of cars is fixed at ten miles an hour by the ordinance, while six miles is the limit in the business section.

But this is not the worst. According to the ordinance, all persons must stand a rigid examination as to their ability to control their cars. The examiners will be the electric inspector, the health officer and the city engineer. Inspector Frank Parfitt and Engineer J. B. F. Breed will test the drivers on their knowledge of the machinery of their cars, while Dr. Allen will examine their physical condition, like the physician for a life insurance company.

The local club is strenuously opposing the passage of the measure.

Gave their Pastor a Car.

The Rev. F. A. Kahler, pastor of Holy Trinity Lutheran Church, Buffalo, having experienced much difficulty in personally visiting his large congregation, has been presented with a new automobile. He is now able to cover the ground in half the time formerly consumed.

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Here's the "Automobile Well Borer."

Automobiles have been put to many uses, but it remained for J. A. Gates, of Alturas, Cal., to bring out what is probably the first "automobile well borer." Necessity was indeed the mother of invention in his case, for he found the use of horses too expensive on account of the bad roads and heavy grades in the district surrounding his home. He accordingly had a new machine built, using a gasolene engine, which propels the machine from place to place and also drives the well boring apparatus.

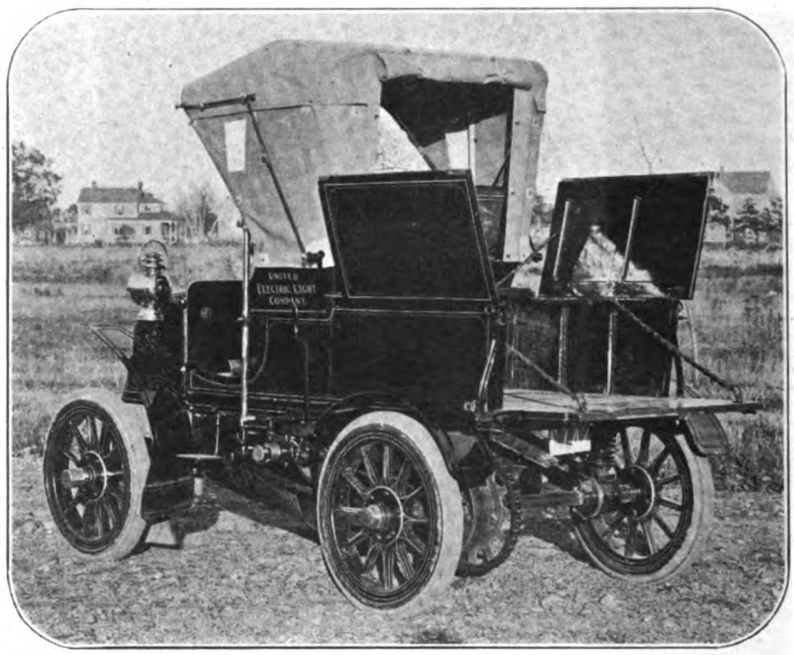
Power is furnished by a gasolene engine with double opposed cylinders of six-inch bore and eight-inch stroke, running at a maximum speed of 800 revolutions per minute. The valves are large and of nickel steel. The crankshaft is also of nickel steel, two inches in diameter, with main bearings two inches by four and one-half inches, bushed with bronze. Connecting rods are of steel marine type. Ignition is by jump spark, the source of current being a dynamo. Speed of the motor is governed by the throttle. Gasolene is supplied to the vaporizing chambers by means of a pump, the level being constant and the surplus returning to the tank through a by-pass. The transmission gives three forward speeds and reverse, one lever being used for all speed changes. The gears are always in mesh, and the drive is direct on the high gear. The gears are of steel and bronze, the speed, change and differential gears running in the same oil-tight case. The three gear positions give speeds of one and one-half, three and six miles an hour.

On account of the extremely bad roads and long hills to be negotiated in travelling through the country, the rear wheels, which are very heavy and strong, are provided with steel tires five inches wide with three-quarter-inch "grousers" riveted on to give a grip where traction is poor. In case the wheels cannot get grip enough to move the machine out of a bad place, a steel cable 800 feet long can be reeled out, secured to a tree or rock and the motor thrown into gear with the cable drum, thus pulling the machine out. The frame of the vehicle is constructed of steel of I-section, with channel steel cross members.

The machine was tested by its builders and proved capable of climbing any hill that could be found with a road on it. The complete machine weighs 4,559 pounds. The engine weighs 720 pounds. The same engine that furnishes the propulsive power is used for operating the well boring machinery when the usual derrick is rigged.

The most fantastic charge yet made against the automobile emanates from a Scotchman named Williamson. "The rapid drive," he says, "must be as destructive to health as it is to conversation and to sight and to human teeth. Indeed, the bottom of every car is whitened with the ivory falling from the gums of old and young alike."

Motor Wagon for Wire Watchers and Repairmen.



The Knox Automobile Co., of Springfield, Mass., has delivered to the United Electric Light Co., of that city, two of its "waterless cars," which are to be used as "emergency wagons." The machines have only one seat, the rear part being used to carry repair materials, while a tool box is placed in front. The tool and repair compartments are covered over so that the cars have the appearance of pleasure vehicles. In addition to the regular equipment of lights, each machine is fitted with a searchlight, arranged so that it can be turned in any direction in order to facilitate repairs to wires on dark nights.

How Automobiles Were Used During Election.

One of the features of Election Day at Detroit, Mich., was the unprecedented use of automobiles, it being conservatively estimated that over 400 were in constant use during the day. Candidates who did not own machines contrived, as a rule, to borrow from friends or to rent from some livery. Their use introduced a decidedly new method in politics, and resulted in an unusually heavy vote being polled.

In the case of the Republican candidate for Congress, between thirty and forty automobile owners tendered their services and machines to the campaign committee. The automobiles not only facilitated the carrying of voters to and from the polls, but enabled the various committees to keep closer in touch with the workers than has ever been possible in the past.

The five leading newspapers made use of twenty Oldsmobiles supplied by the Auto Express Co. These machines enabled the reporters to cover the field more thoroughly than ever before, and were kept running all during the day and practically all night.

Seeking the Gold of the Gold Seekers.

An automobile stage line through territory where the humble burro has been the standard means of transit is being tried by two enterprising young Californians. They are Thomas H. Murray and Ross d'Remer, and their line is from Tonopah, Nev., to the recently discovered gold fields, twenty-six miles away. When the discovery was first announced, the pair started for the gold fields, but had to remain at Tonopah for some time owing to the lack of transportation facilities. While they were waiting the idea occurred to them that they could make more money transporting passengers to the gold fields than they would by digging for gold. They went to Los Angeles and secured a 10-passenger car, which they started on the 365-mile journey over the roads to Tonopah in charge of an experienced driver. They will carry the mails and light express matter as well as passengers.

'Frisco Wants Their Photographs.

Because it is asserted that San Francisco dealers accumulated permits and loaned them to customers who wished to drive in Golden Gate Park, the commissioners of that pleasure ground have decided that hereafter applicants for licenses will have to furnish the secretary of the board with their photograph, which will be attached to the back of their permits as a means of identification. The secretary of the board was instructed to request the police to stop all automobilists entering the park during the next thirty days and compel them to show their licenses. It was also decreed by the board that hereafter all applicants for permits must call on the secretary of the commission for them.

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How the Coil Puzzled Him.

"I thought I could trace every and any cause of missing or stoppage without any trouble, and not be long about it. However, missing recently plagued me for ten miles during which I made as many investigations. Then my car stopped dead and I was humbled to the dust," remarks an observant automobilist.

"I noticed it was after a heavy jolt. This put me on the wrong scent. It looked like a disconnection. Making myself positive everything else was all right, I took out the coil, examined the terminals, found them sound and replaced it. Connecting up again it buzzed vigorously, though I had done nothing. We went along merrily for a mile. History repeated itself. Again I took out the coil, did nothing as carefully as before, and replaced it in the same manner. History was true to her tradition. We went off again, presently missed and finally stopped.

"Then the same performance, with the same result several more times, with little variations. How I looked at and puzzled over that coil you may guess. I wanted to get at its interior badly with a hammer. At last it would not buzz at all. I happened to be near a repair shop, into which I drove. On the stand off it went again, without a miss. He could not persuade it to miss. I was eyed curiously. Not convinced, I borrowed a coil and put it in my pocket. At the first bump on the road my own stopped dead once more. Fancying it a near approach to witchery, I fixed the spare coil and all went well to the end of my journey.

"An expert, after much brow knitting and many tests, discovered by jarring it that the iron core was very slightly loose, and with a jerk protruded very slightly, but sufficiently now and then by vibration to make a contact. That was all. A few short lengths of soft iron wire—not steel with its magnetizing power—were wedged in, and the remedy was complete."

Exaggeration of Gradients.

"You hit the nail on the head when you pointed out the general misconception that prevails on the subject of gradients," said George A. Banker, who had run over from Philadelphia on one of his visits to the Banker establishment in this city. "But you did not put the case half strong enough.

"There is a lot of talk among men who should know better about climbing 15 and 20 per cent grades and thinking nothing of them. The average motorist always exaggerates grades, and believes that he has done something wonderful when he has really only accomplished what any decent car should do. Over in Philadelphia you hear people talk of climbing Ogontz Hill, which they say is a 20 or 25 per cent grade. Now, that is all nonsense. Ogontz Hill won't measure more than 10 or at the outside 12 per cent, and there ought to be no trouble in getting up it.

"Out in Pittsburg, now, they have some hills that are steep and hard to climb. Negley avenue hill is a good one; it is about an 18 per cent rise, and there are plenty more that are worse than it. But Philadelphia has nothing like the Pittsburg hills. I doubt if there is a hill there that will measure more than 15 per cent."

Trying to Protect the Purchasers.

With the object of throwing some safeguards around the sale and purchase of second-hand cars, an English contemporary has devised and put in operation an examination system. Under this system an examination of any car will be made by experts and a detailed written report submitted. This examination may be made at the solicitation either of the owner of the car who wishes to sell, or of another person who contemplates purchasing it. In either case the method of examination and the fee charged are the same. The latter varies with the price of the second-hand car. For one selling at $750 it is $10, and for a $2,000 car $20.

As set forth by the journal in question, the "system's" origin is due to these facts:

"There are numbers of good sound second-hand cars for sale, which are well worth purchasing at the prices at which they are offered, but amateurs fear to buy because they are not qualified to know the difference between the signs of fair wear and tear and absolute neglect or unscrupulous disguising of defects. There are many honest expert examiners who will give a conscientious report on a second-hand car for a reasonable fee, but there are a few unscrupulous ones who for a consideration from the seller will make a false or partial report to mislead the would-be purchaser.

"If they could be sure of honest advice, the private buyers would not hesitate to purchase second-hand cars. They cannot afford a new one of the type they want, and so they abstain from buying. The owners of good used cars, who would buy a new car if they could sell their old one, also suffer from this widespread and not always groundless suspicion of second-hand vehicles."

When Matches are Missing.

When motoring, if matches cannot be had and a light is wanted, it may be obtained in the following way, if the car is fitted with accumulator and coil ignition: Disconnect one of the high tension wires from its plug; place the free end of this wire in such a position that it lies about a quarter of an inch away from the cylinder casting. A small piece of cotton waste or a piece of paper should now be saturated with gasolene and placed over the free end of the ignition wire. Switch on the current and slowly turn the starting handle of the motor. When the spark jumps from the free end of the disconnected wire to the cylinder casting it will set the paper or waste on fire. Extreme care must be taken not to allow the blazing waste or paper to fall into the "apron" underneath the motor, if one is used. This "apron" is usually covered with grease and oil, and if it catches fire it may imperil the car.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—1904 White Touring Car with top, gas lamps and side baskets. Car guaranteed first class shape; $1450 00. Reason for selling—buying 1905 Model "White." Address T. W. J. SUITE, 23 Manhattan Blk., Cleveland, Ohio.

WE have discontinued the Franklin agency, and have one brand new Franklin tonneau, car finished in dark blue. Price, $1400.00. FISHER AUTOMOBILE CO., 330 N. Illinois Street, Indianapolis, Ind.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

1904 WINTON, practically new; three months wear; perfect condition; canopy top, side baskets; $1490. T. H. PHELPS, Oklahoma City, O. T.

FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address Room 403, First National Bank Building, Danville, Ill.

AUTOMOBILE for Sale—1904 Franklin Car, used since June; finest engine in the city. WM. B. JOYCE, 346 Broadway



TIRE COVERS.

Best Goods. Lowest Prices.

Write for quotations and catalogue of other Auto Supplies.

The Wm. H. Wiley & Son Co.
Box 78. Hartford, Conn.

A Sharp Eye Ahead!

Driving an auto will be more of a pleasure and less of a strain on the eyes if you use EYE-FIX. This tried and true remedy strengthens weak eyes, cures watery eyes and allays irritation caused by wind and cold. It is an effective



tonic for eyes that are dull, tired or overtaxed—make them bright and clear—removes the aches and pains. Quickly cures sore eyes and instantly soothes eyes that are injured by particles of dust, etc. Carry EYE-FIX in your pocket, a small vial and a dropper in a neat case. Use it in a jiffy—two drops is a dose. All druggists and opticians sell EYE-FIX at **50c.**

Every dealer in automobiles and sundries should have EYE-FIX in stock. He will find a good sale for it among his patrons.

Inquiries cheerfully answered, and we send a trial bottle, post-paid, for 10c.

EYE-FIX REMEDY CO.,
Dept. S., Detroit, Mich., U. S. A.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G. & J TIRE CO., Indianapolis, Ind.

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The Week's Patents.

773,895.—Running Gear for Motor Vehicles. Emil B. W. Reichel, Steglitz, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill., a Corporation of Illinois. Filed August 17, 1899. Serial No. 727,526. (No model.)

Claim—1. In an electric motor vehicle, the combination with a wheel frame or truck, of means independent of the vehicle body for connecting the truck and axle, said means being adapted to permit both a horizontal swinging movement and a vertical bodily movement on the part of the axle, substantially as described.

773,934.—Muffler. Henry Ford, Detroit, Mich. Filed June 22, 1904. Serial No. 213,581. (No model.)

Claim—1. In a muffler, the combination of a cylindrical casing having heads and provided with an exhaust opening, tubular members extending inward from said heads opposite each other with a space between their opposed inner ends at the center of the casing for the escape of the exhaust from the axial chamber formed by said members, one of said members being provided with an opening in its side, and an exhaust pipe extending through the wall of the casing and secured within the opening in said tubular member.

773,942.—Slip Preventing Device for Rubber Tired Wheels. Michael J. Kelly, Springfield, Mass. Filed October 26, 1903. Renewed October 6, 1904. Serial No. 227,364. (No model.)

Claim—1. A rubber tired wheel having adjacent its tread one or more shoes, mounted for revoluble movement thereon in unison with the wheel rim, and also arranged for independent movements of projection across the tread and withdrawal therefrom, means for guiding and constraining the shoes in such movements, and means for imparting such movements of the shoes thereto.

773,961.—Storage Battery. Charles B. Morgan, Cleveland, Ohio. Filed April 18, 1904. Serial No. 203, 581. (No model.)

Claim—1. In storage batteries, an aluminium plate provided with pockets and pieces of aluminium and active material filling said pockets, substantially as described.

2. In storage batteries, an aluminium plate having pockets filled with aluminium particles and said particles and plate electroplated with a conducting metal, and active material filling the interstices of said particles, substantially as described.

773,984.—Muffler. Eugene C. Rochard, Detroit, Mich., assignor to The Buick Motor Company, Detroit, Mich., a Corporation of Michigan. Filed January 11, 1904. Serial No. 188,569. No model.)

Claim—1. In a muffler the combination with a discharge conduit of a casing inclosing the same, and a plurality of flattened discharge nozzles within said casing and connected to said conduit.

774,034.—Fuel Feeding Mechanism for Internal Combustion Motors. Augustine E. Brillié, Paris, France. Filed January 19, 1904. Serial No. 189,720. (No model.)

Claim—1. A fuel feeding mechanism comprising a fuel reservoir, a plurality of pumps, a supply passage leading from the pumps to the motor, a drive shaft, means connecting the shaft with the pump pistons and so arranged as to actuate the pistons of the pumps successively, the duration of the delivery stroke of one pump overlapping that of another pump and the aggregate delivery of the pumps equaling the maximum delivery of one pump.

774,079.—Vaporizing Carbureter for Internal Combustion Engines. Charles J. Jager, Boston, Mass. Filed November 7, 1903. Serial No. 180,166. (No model.)

Claim—1. A vaporizing carbureter having the main passage, the hydrocarbon pipe located within the said passage, the air inlet ports to admit additional quantities of air, and the automatic valve provided with the reticulated diaphragm through which the combined air and vapor flow.

774,307. Air and gas mixer for carburetters. Ira E. Butler, Chicago, Ill. Filed January 21, 1903. Serial No. 139,945. (No model.)

Claim.—1. An air and gas mixer for carburetters, comprising an air chamber having a stub projecting laterally therefrom, which is provided with a longitudinally elongated slot in its side wall, a valve-controlled injector striking through the wall of said air chamber diametrically opposite said stub, a longitudinally adjustable mixing tube fitting snugly in said stub, and a thumb screw tapped into said mixing tube and extending out through the slot in said stub, as and for the purpose set forth.

774,315. Wheel. Frank J. Fagot, Lowpoint, Ill. Filed June 24, 1904. Serial No. 214,008. (No model.)

Claim.1. In a wheel, the combination of a rim, a rubber tire thereon, a metallic tire-covering arranged over the tire, and having edge flanges bearing on the perimeter of the rim, at opposite sides of the tire, and also having meeting ends, and means connecting said meeting ends.

774,377. Apparatus for bending pipe. Louis H. Brinkman, West Hartford, Conn., assignor to Whitlock Coil Pipe Co., West Hartford, Conn., a corporation of Connecticut. Filed August 19, 1904. Serial No. 221,314. (No model.)

Claim.- 1. In a pipe bending apparatus, the combination with a supporting table or framework, of a pair of mandrels normally

THE ACME IMPROVED 1905 MUFFLER.



Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

AUTOMOBILE.
STATIONERY.
MARINE.

ACME MOTOR CAR & REPAIR CO.,
Cleveland, Ohio.

Southern Agents: A. L. DYKE, 311 Pine St., St. Louis, Mo.
Eastern Agents: SMITH & EDWARDS, 116 Nassau St., New York City.
Western Agents: E. J. DAY & CO., 519 Mission St., San Francisco, Cal.

WHITLOCK COOLERS

For 1905.



The Leading Automobile Builders have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of cool- is worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT.

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held in alignment and arranged to receive the pipe to be bent upon their inner ends, said mandrels being capable of a swinging movement about axes at right angles to the axes of the mandrels, a pair of formers, and means for moving said formers against opposite sides of the pipe to be bent and in different planes.

774,392. Explosive engine. Robert Miller, New York, N. Y. Filed September 14, 1903. Serial No. 173,092. (No model.)

Claim.—1. In an explosive engine, a stepped cylinder and stepped piston that form an explosion chamber and a compressed air chamber at opposite ends of the piston, and an intermediate expansion chamber between the reduced piston section, and the wall of the enlarged cylinder section, combined with a valve controlled by-pass connecting the explosion chamber with the expansion chamber, and a pipe connecting the compressed air chamber with the explosion chamber, substantially as specified.

774,411. Vehicle wheel. Henry W. Adams, jr., Chicago, Ill., assignor to Scovill Manufacturing Co., Waterbury, Conn., a corporation of Connecticut. Filed March 16, 1904. Serial No. 198,387. (No model.)

Claim.—1. A vehicle wheel comprising a suitable felly, a pneumatic tire supported on said felly, a clamping bolt holding the tire in place and extending through the felly, said bolt having relatively large and small diameters, a clamping nut screwed upon the larger diameter of the bolt, and formed with an extension, and a lock nut screwed upon the smaller diameter of the bolt and bearing against the extension on the clamping nut, said lock nut being closed at its outer end, the combined length of the lock nut and said extension being greater than the length of the smaller diameter of the bolt, and said extension being adapted to extend more or less over the smaller diameter of the bolt, according to the thickness of the felly, substantially as shown and described.

774,432. Spark plug. Edward B. Jacobson, West Somerville, Mass., assignor to Pittsfield Spark Coil Co., Pittsfield, Mass., a corporation of Massachusetts. Filed September 4, 1901. Serial No. 74,293. (No model.)

Claim.—1. The combination with a hollow plug, of a bar-electrode extending through said plug, and an insulating sleeve formed of a sheet of mica wound around the bar-electrode.

774,433. Steam engine. Daniel E. Johnson, Hartford, Conn., assignor to Frederic C. Billings, Hartford, Conn. Filed August 4, 1902. Serial No. 118,256. (No model.)

Claim.—1. A single acting four-cylinder compound engine provided with two valves, one of the valves controlling admission to and exhaust from the two high pressure cylinders, the other controlling admission to and exhaust from the low pressure cylinders, and an intermediate controlling valve for exhausting the high pressure cylinders independently of the low pressure cylinders and admitting live steam to the latter for operating the engine as a simple engine.

774,434. Steam engine. Daniel E. Johnson, Hartford, Conn., assignor to Frederic C. Billings, Hartford, Conn. Original application filed August 4, 1902, Serial No. 118,256. Divided and this application filed November 27, 1903. Serial No. 182,755. (No model.)

Claim.—1. A steam engine provided with a plurality of cylinders, a crank shaft rotated therefrom, a plurality of eccentrics and valves operated thereby for the respective cylinders, and means to impart differential rotative movement to the said eccentrics for reversing the engine.

774,494. Speed control of electrically propelled vehicles. John S. Raworth, London, England. Filed June 5, 1903. Serial No. 160,170. (No model.)

Claim.—1. In a regenerative motor control system for electrically propelled vehicles, the combination with motors with a shunt field winding, of means for controlling the field circuit, means for controlling the armature circuit and interlocking means so arranged that the armature circuit cannot be made or broken until the field circuit controlling means are in a certain position.

774,554. Valve gear for explosive engines. Alfred Bougault, Paris, France, assignor to the Societe Francaise de Constructions Mecaniques (Anciens Etablissements Call), Paris, France. Filed September 21, 1903. Serial No. 174,123. (No model.)

Claim.—1. A controlling mechanism for exhaust valves of internal explosion engines, having a lever adapted to open said valve, a second lever adapted to operate the first lever, one of said levers being adapted to have a rolling contact upon the other, a valve gear shaft having an eccentric, a rod operable by the eccentric and serving to actuate the second lever in a direction to operate the first lever to cause the opening of said valve, and an exhaust valve closing spring compressible by said second lever at a predetermined time.

774,556. Automobile. Fenelon B. Brock, Washington, D. C. Filed April 11, 1904. Serial No. 202,616. (No model.)

Claim.—1. In an automobile, the combination of a car, a water circulating system for the motor located thereon, and a heater for said system for generating heat independent of the motor.

Seeking Substitute for Gasolene.

Experiments with naphthalene as a substitute for petroleum products in automobiles have been conducted by European motorists, and with good results. It appears to have been demonstrated that naphthalene is quite as cheap as kerosene, is less productive of unpleasant odors in the exhaust, and is conspicuously cleanly inside the cylinder, presenting no indications of a tendency to cause tar and sooty deposits, which are so apt to give trouble with heavy oils.

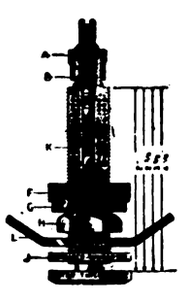
Naphthalene itself is a very interesting body. In appearance it may be said to stand half way between paraffin wax and camphor. It has something of the aroma of a strong smelling camphor, and it has much of the appearance of paraffin wax. Chemically it is a hydrocarbon, its percentage composition being represented by the formula $C_{10}H_8$, and is the second of the so-called aromatic series, of which benzine is the best known member. It is a curious fact that naphthalene can be formed by the destructive distillation or heating up, under suitable conditions, of almost any organic substances. If alcohol, petroleum residues, acetic acid, or a large number of other substances that are of organic origin, be passed through a tube filled with pumice stone, the whole being kept at a red heat, naphthalene is produced, and may be subsequently collected, though this is possibly not a commercial method of manufacturing it.

Pure white naphthalene is practically insoluble in water. It is very slightly soluble in hot water, moderately in gasolene and paraffin oil, more soluble in alcohol, and very easily dissolved by toluene and ether. It boils at about 218 degrees Cent., and melts at about 79 degrees Cent. into a clear liquid. Coal tar, whether obtained from gas works or coke furnaces, is the principal source from which it is obtained, the tar distillers producing it in large quantities during the operations that are employed for separating benzine from tar.

It is highly probable that, so far as we are at present able to judge, either the crude naphthalene, or, at any rate, naphthalene purified to a far less extent than is necessary for the manufacture of dyes, will be found practically as suitable as the pure naphthalene for the motive power of engines. The reason is that the substances which are removed from it by the purifying processes are oily impurities and admixtures of substances like carbolic acid, whose presence may not have any ill effects on the naphthalene as a fuel. Should this view prove to be correct, it will have a very serious bearing on the ultimate applicability of naphthalene for purposes of locomotion.

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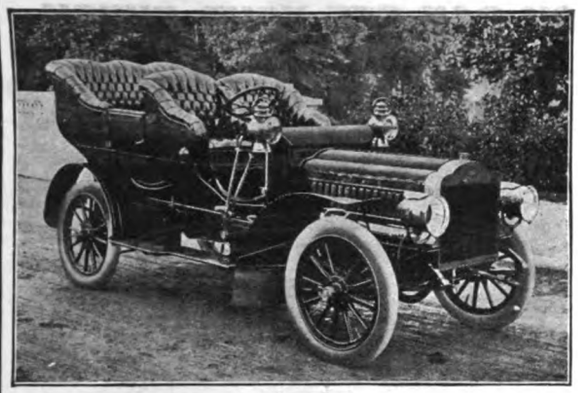
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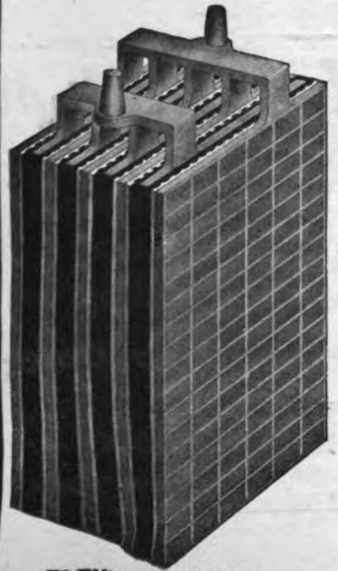
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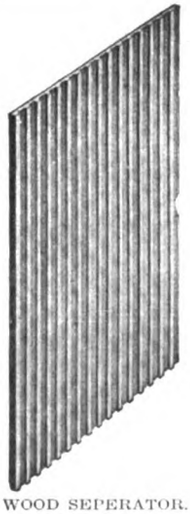
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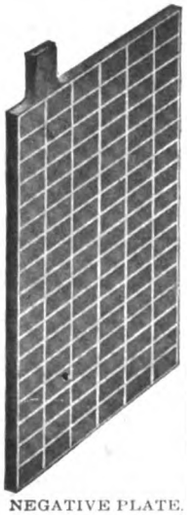
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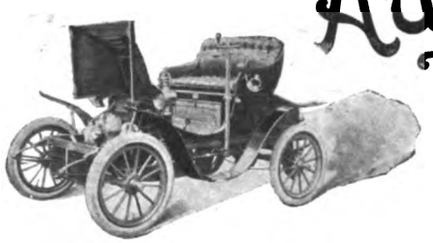
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Auto-Talks

NUMBER TWO.

Our first "Auto-talk" we devoted solely to *value.*

In this, the second, we will touch upon the subject of construction. While all the good points of Autocar construction cannot be covered in a talk of this length, we want to bring to your attention some of the features of the Autocar which are so obviously advantageous that they must be appreciated by the veriest novice.

The illustration above shows the easy accessibility of the Autocar motor. It is never necessary to crawl under an Autocar or to remove the body. To reach the motor you have only to lift up the hood in front. To get at the transmission case simply lift up the floor between front seat and dashboard.

The mechanism of the Autocar is exceedingly simple; this applies to both the working and the steering parts. The novice will not find in the Autocar the appalling intricacy of parts that he may have come to believe inseparable from an automobile.

The engine in all Autocars is of the two cylinder horizontal opposed type, which means that there is no noticeable vibration. The engine of the four-passenger car develops 12 actual horse power, that of the runabout 10 actual horse power. The engine is oiled automatically, is water cooled, and the number of parts is reduced to a minimum.

The autocar transmission is ball-bearing. The car is gear-driven—no chain. Ample brakes are provided.

The double spark coil used in the Autocar is of the very best and most approved type. The gasolene tank holds ten gallons, which, on good roads, is sufficient for 200 miles.

All parts of the Autocar, with the exception of bodies and tires, are made in the Autocar shops. They are made by men who have been building successful automobiles for eight years. Every part is made in harmony with every other part, so that the entire mechanism operates in perfect unity.

We know that none but the best materials go into Autocar construction, and we know that the workmanship is expert and thorough.

Autocar bodies are made for us by a leading body maker, and are finisehd like the finest coaches.

The Autocar has a speed of from 3 to 35 miles an hour. Extreme ease of control is attained through an unusually simple arrangement of levers.

The price of the Autocar Runabout, shown above, is $900; the Autocar Four-Passenger Car, $1,700.

In our next month's talk we will tell you of the Autocar's performance. Our booklet, which we send free, gives full description of the Autocar's construction, and addresses of our dealers throughout the country. You should have it.

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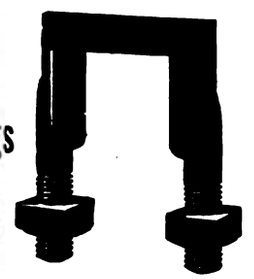
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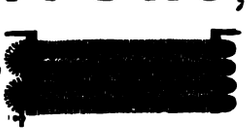
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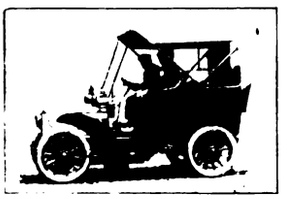
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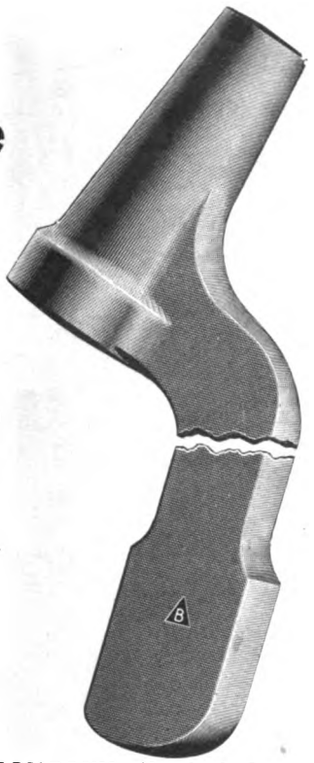
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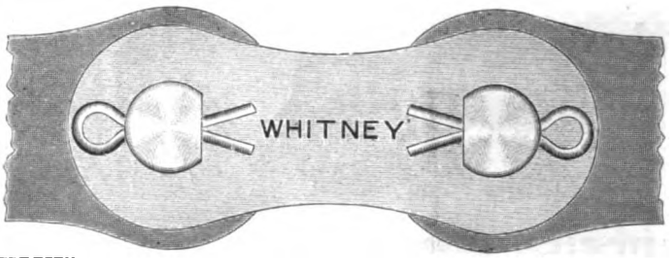
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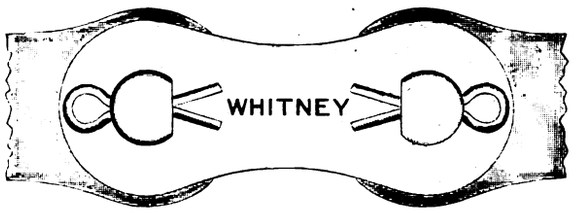
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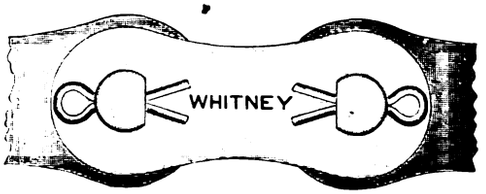
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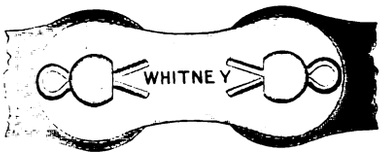
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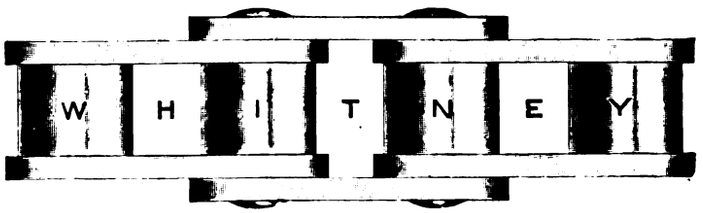
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"LENAWEE" "COTTA" "PRESCOTT" "ELWELL-PARKER"
"WESTERN ELECTRIC" "SNELL" "GIBBS"

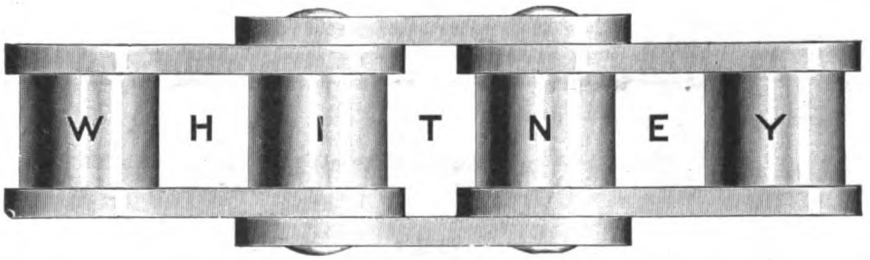


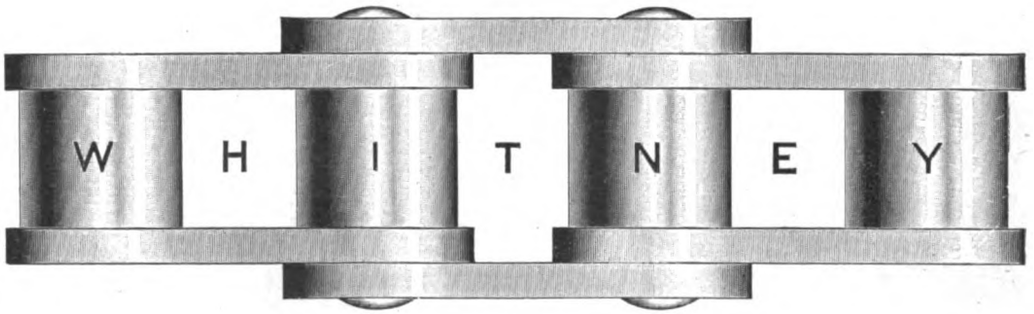


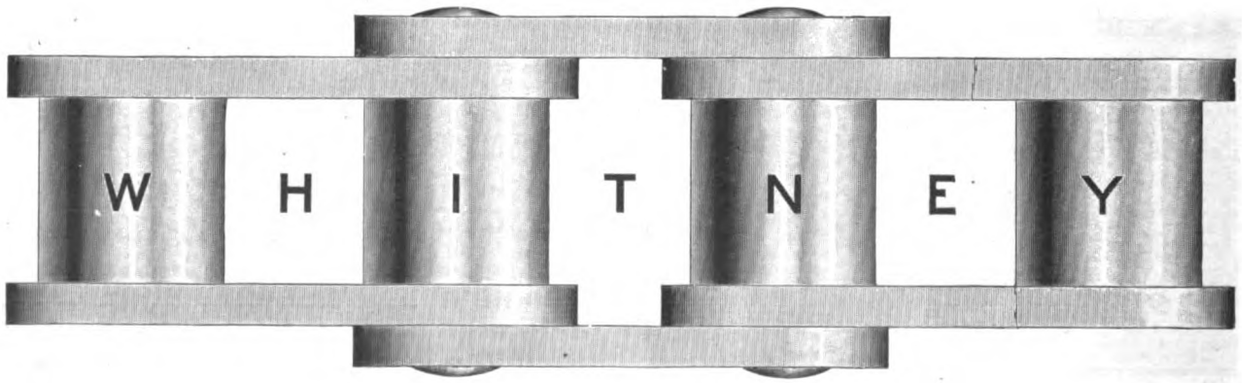












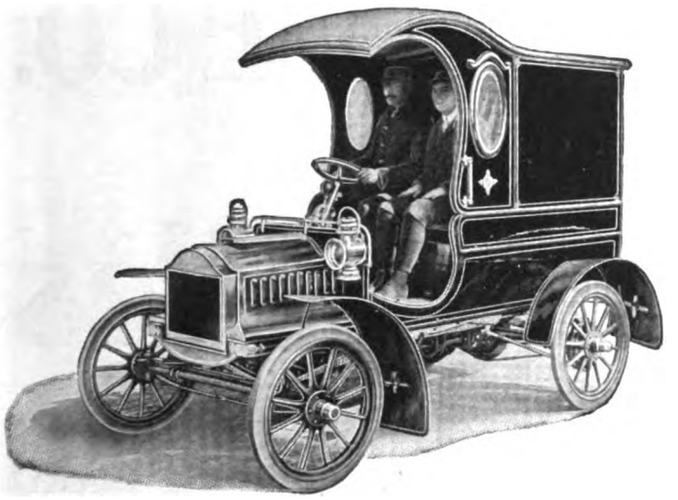
THE WHITNEY MFG. COMPANY,

HARTFORD, CONN.

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OLDSMOBILE

Two New Commercial Cars.

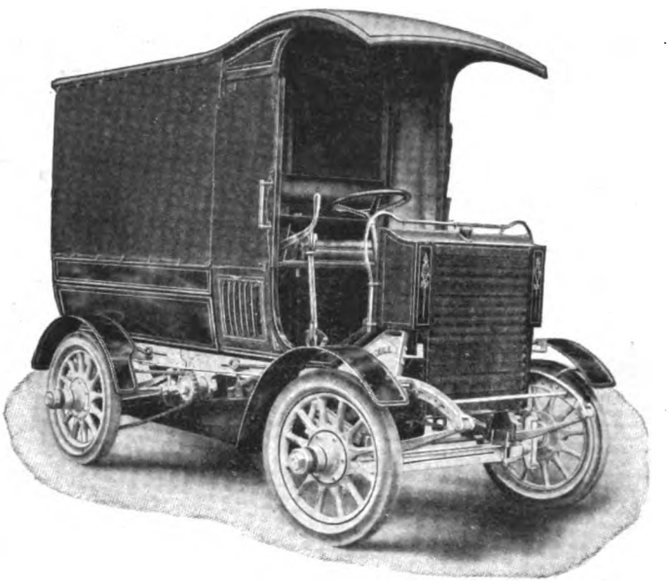


OLDSMOBILE
10 H. P. DELIVERY CAR.
PRICE, $1000.

The chassis of this car is the same as the Oldsmobile Tonneau Car. The delivery body has a carrying capacity of 45 cu. ft. Wheel base, 82 inches; Oldsmobile carburetor, jump spark ignition, honeycomb radiator, tilting steering post, rear hub and transmission brakes; water and gasolene capacity, seven gallons each. Full details promptly sent to those interested.

OLDSMOBILE
HEAVY DELIVERY CAR.
PRICE, $2000.

This car fully meets commercial requirements. Externally it gives the impression of strength, capacity and endurance. Its construction shows a wonderful development in delivery car building—83 inch wheel base, planetary transmission, two speeds forward and reverse—gears encased and dun in oil—clutch of internal sliding cone type, positive in action—double chain drive from jack shaft to rear wheels—two cylinder vertical engine, 5 in. x 5 in.—15 B. H. P.—carrying capacity 1,500 to 2,000 pounds—space, 87 cu. ft.—engine under seat, making all space back of seat available. Full particulars on request.



OLDS MOTOR WORKS,

1332 Jefferson Ave.,

DETROIT, - U. S. A.

Member of the Association of Licensed Automobile Manufacturers.

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A Grand Prize

Has been awarded by the Juries of the Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

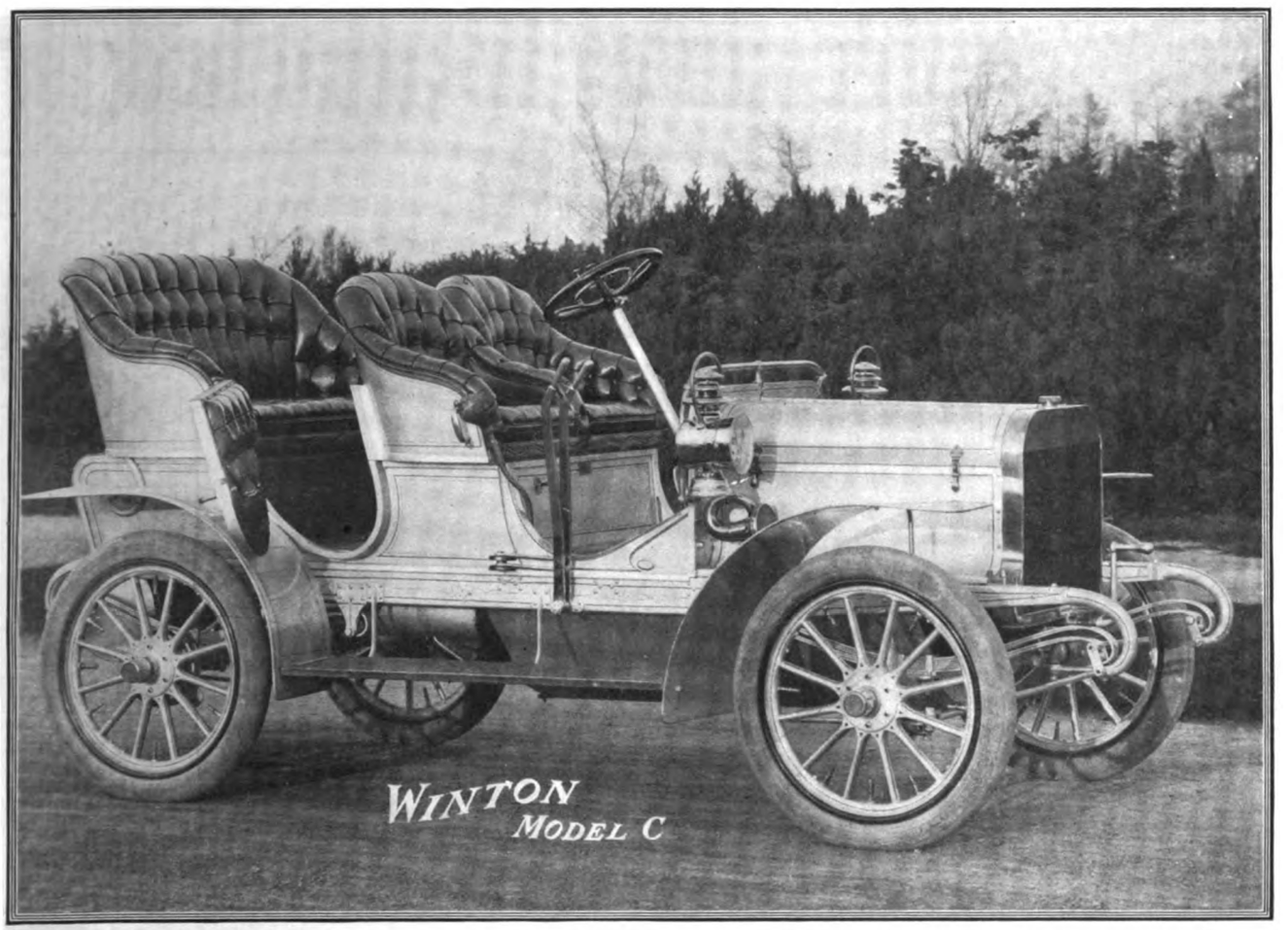
Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

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WINTON



Model A Special, 40 H.P.,	**$4500**
Model A, 40 H.P.,	**3500**
Model B, 24 H.P.,	**2500**
Model C, 16 H.P.,	**1800**

All models have four-cylinder vertical motors.

Send for Booklet No. 3. It tells the exact reasons why WINTON Cars for 1905 are already famous.

The Winton Motor Carriage Co.

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

POLAR COMPOUND.
An anti-freezing solution, with the WINTON guarantee. Will not corrode metal. No need laying up your car throughout the coldest season. We will advise you fully if interested.

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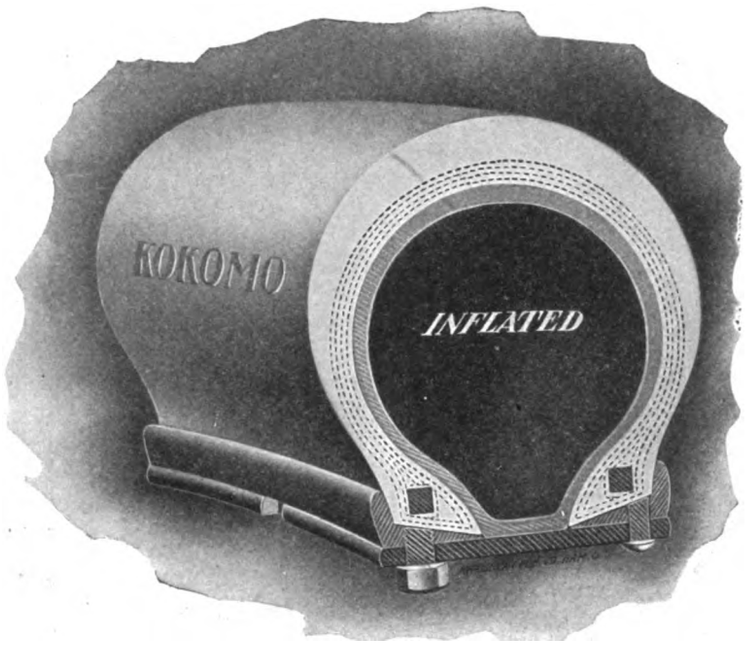
— THAT ETERNAL QUESTION —

— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

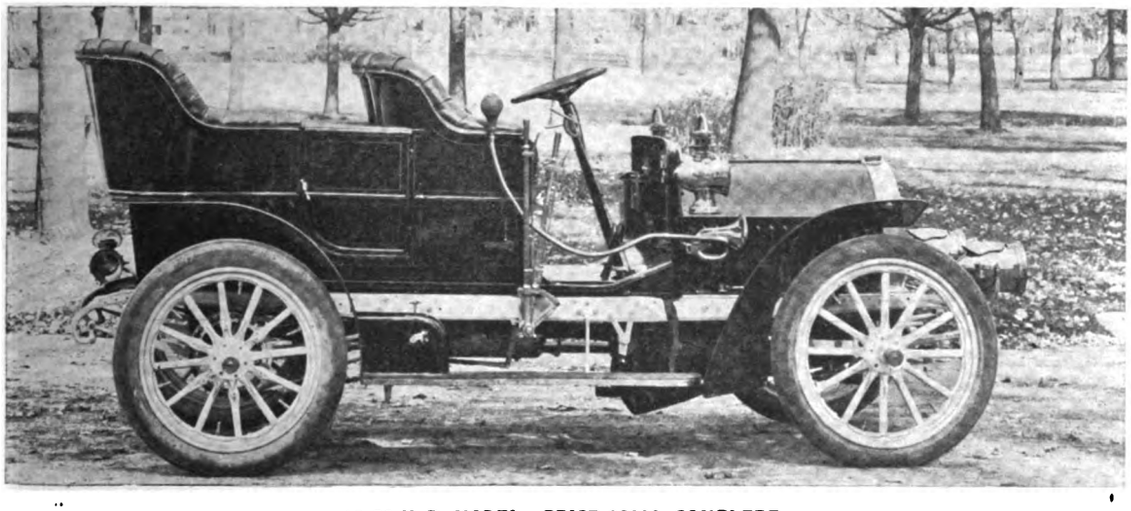
KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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Locomobile GASOLENE CARS.

1905 MODELS.

FOUR Styles in all. Each car equipped with a powerful four-cylinder front vertical motor, sliding gear transmission, and beautiful double side-entrance tonneau body. The most attractive line of high-grade cars on the market. Specially selected materials. Workmanship and finish of the highest possible character. Our complete line, record for reliability, and facilities for early Spring delivery, will interest every agent. Write for full particulars concerning our product and our agency proposition.



15-20 H. P. MODEL. PRICE $2800, COMPLETE.

Equipment includes five lamps of best quality and full assortment of tools, accessories and spare parts all ready for touring. All cars similarly equipped.

LOCOMOBILE LINE FOR 1905.

15-20 H. P. $2800

20 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Three-speed transmission. Pressed steel frame. Wheel base, 92 in. Weight, 1800 lbs.

20-25 H. P. $3700

25 h. p. motor with automatic inlet valves, and jump spark ignition. Three-speed transmission. Channel steel frame.. Wheel base, 96 in. Weight, 2300 lbs.

30-35 H. P. $5000

35 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Three-speed transmission. Pressed steel frame. Wheel base, 106 in. Weight, 2500 lbs.

40-45 H. P. $7500

45 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Four-speed transmission. Pressed steel frame. Wheel base, 110 in. Weight, 3000 lbs.

THE *Locomobile* COMPANY OF AMERICA, Bridgeport, Conn.

Member Association of Licensed Automobile Manufacturers.

NEW YORK—Broadway, corner of 76th St.
PHILADELPHIA—No. 249 N. Broad St.

BRANCHES

CHICAGO—No. 1354 Michigan Avenue.
BOSTON—No. 15 Berkeley St.

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The New Orients.

We are now ready to furnish all necessary particulars to agents and dealers regarding our new four-cylinder air-cooled cars. Our handsome 20 H.P. side entrance touring car—listing at $2000—will soon be shown in this space, and will be shortly followed by our equally attractive 15 H.P. touring car—listing at $1500. If you are interested, write to us now. Do not wait until our agency for your town has been promised to some one else.

WALTHAM MFG. CO., Waltham, Mass.



THE DAIMLER MANUFACTURING CO.

955 Steinway Avenue, Long Island City, New York

announces that its

1905 MODEL WILL BE AN **EXACT** REPRODUCTION OF THE 40-45 H. P. MERCEDES,

built by the Parent Company

THE DAIMLER-MOTOREN-GESELLSCHAFT, OF GERMANY.

THE DAIMLER MANUFACTURING CO.

controls all the foreign patents of the Parent Company for the UNITED STATES and CANADA.

Descriptive Catalogue will be Ready for Distribution Early in January, 1905.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

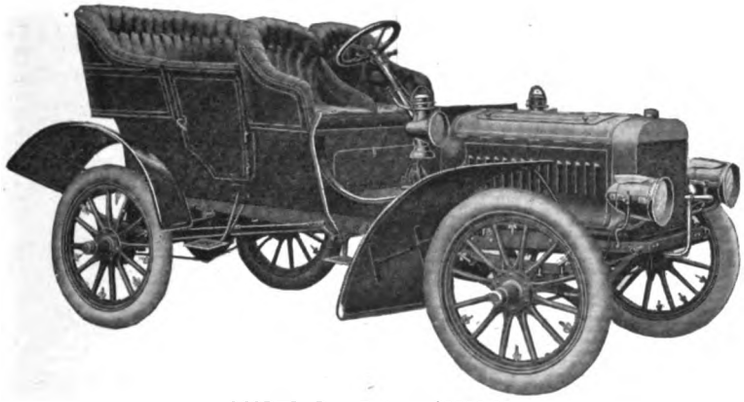
Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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The FORD 1905 Cars

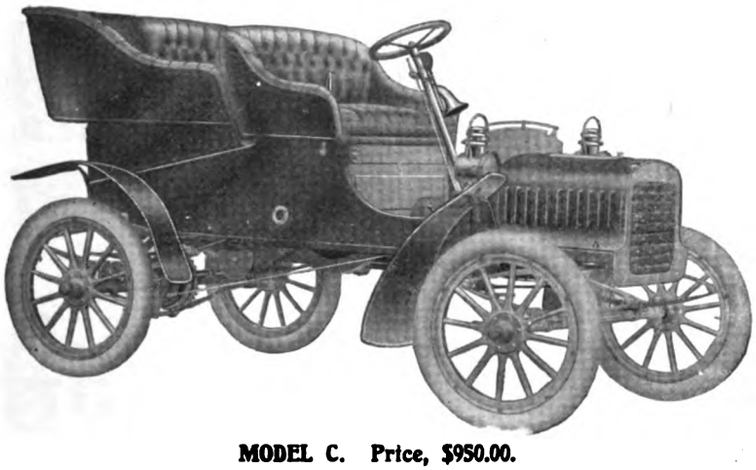


MODEL B. Price, $2000.00.

HENRY FORD'S LATEST AND GREATEST SUCCESS.

Our 1905 Touring Car weighs only 1710 lbs. The 4-cylinder vertical motor develops over 20 horse power, SO THAT THIS CAR HAS MORE POWER FOR ITS WEIGHT THAN ANY CAR IN THE WORLD. This means considerably less wear on the tires and consequently a great saving to the owner. It also means there is ample reserve power for steep grades and sandy roads.

Wheel base, 92 inches; direct drive, with universal coupling; cylinders, 4 x 5, water cooled; automatic oiling device with force feed; large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car place this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horse power, planetary transmission, chain drive, and increased gasoline capacity. The most stylish, low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. Write us To-day for Full Information.

THE FORD MOTOR COMPANY, - Detroit, Mich.

JOHN WANAMAKER, Selling Agent for New York and Philadelphia.

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Mile Record, 52 1-5 Sec.

BULLETIN OF

G & J RECORDS

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.
Peerless Green Dragon,
by Barney Oldfield:
9:12 3-5.

WORLD'S TRACK RECORDS,
Peerless Green Dragon,
by Barney Oldfield:

1 mile,	0:52 1-5
2 miles,	1:51 1-5
3 miles,	2:47 . . .
11 miles,	10:18 1-5
12 miles,	11:15 . . .
13 miles,	12:12 1-5
14 miles,	13:09 . . .
15 miles,	14:05 . . .
16 miles,	15:01 . . .
17 miles,	15:57 . . .
18 miles,	16:33 . . .
19 miles,	17:49 2-5
20 miles,	18:45 2-5

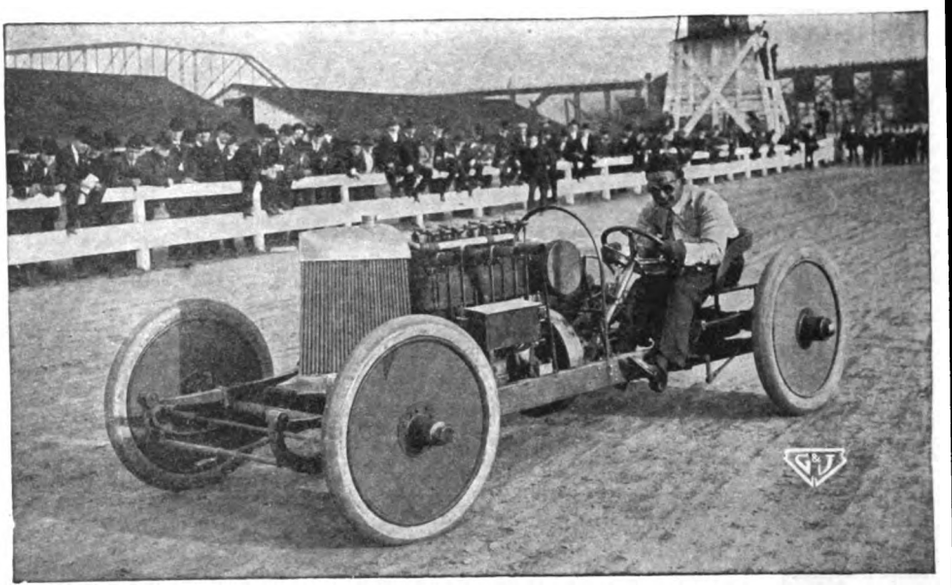
WORLD'S TRACK RECORDS
FIVE MILES,
For LIGHT WEIGHT and MIDDLE WEIGHT CARS.
Ford Racer,
by Frank Kulick:

1st	mile,	59 sec.
2nd	"	57 2-5 "
3rd	"	56 4-5 "
4th	"	55 1-5 "
5th	"	55 1-5 "
Total,		4:43 3-5

WORLD'S 1-MILE TRACK RECORD
for LIGHT and MIDDLE WEIGHT CARS.
20 H. P. Ford,
by Frank Kulick,
55 sec.

WORLD'S 1-MILE TRACK RECORD FOR TOURING CARS.
Pope-Toledo,
by George Fuller:
1:00 3-5.

WORLD'S 10-MILE TRACK RECORD FOR TOURING CARS.
Peerless.
by Barney Oldfield,
10:50 1-5.



BARNEY OLDFIELD

IN THE

PEERLESS GREEN DRAGON

places the mile track record at the above remarkable figure on the Denver track.

G & J Thread Fabric Tires

are FAST, SAFE and DURABLE.

Main Office and Factory:

G & J TIRE CO. Indianapolis, Ind.

Branches: Chicago and Detroit.

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DAD AND ANOTHER FELLOW WENT TO THE COUNTRY YESTERDAY IN THEIR AUTOS. DAD HAD MORGAN & WRIGHT CLINCHER TIRES ON HIS MACHINE BUT THE OTHER FELLOW DID N'T. DAD GOT HOME.

KNISELEY BROS.,
Chicago.

MORGAN & WRIGHT, Chicago.

Gentlemen: I have covered over 5,000 miles in my Peerless Touring Car during the past six months. Morgan & Wright Clincher Tires were used, and they are still in the best of condition and good for several thousand miles more. With a tire experience which includes the use of practically all the different makes, I unhesitatingly say that yours are the most reliable and satisfactory tires on the market.

Yours truly,
C. T. KNISELEY.

MORGAN & WRIGHT, CHICAGO

New York Dayton Detroit
St. Louis San Francisco Atlanta

THE PEERLESS GREEN DRAGON

Equipped with

GOODRICH CLINCHER TIRES

MAKESA NEW WORLD'S RECORD.

Five Miles in Four Minutes and Thirty Seconds.

This is the latest achievement of Barney Oldfield in the races at Denver, Col., Nov. 6th. Most of our fastest automobile drivers demand GOODRICH TIRE EQUIPMENT.

THE B. F. GOODRICH COMPANY, Akron, Ohio.

NEW YORK, 66-68 Reade St. and 1625 Broadway.
CHICAGO, 141 Lake St. CLEVELAND, 420 Superior St.
BOSTON, 157 Summer St. PHILADELPHIA, 909 Arch St.
BUFFALO, 9 W. Huron St. DENVER, 1444 Curtis St.
DETROIT, 80 E. Congress St. SAN FRANCISCO, 392 Mission St.
LONDON, E. C., 7 Snow Hill.

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THE PAST. **THE FUTURE.**

PHELPS GUARDANT TIME LOCK CO.,
No. 74 Cortland St.,
New York, N. Y.

ACME MOTOR CAR COMPANY, Reading, Pa.

GENTLEMEN—Enclosed please find sixty cents in stamps, for the spring shipped me on Nov. 3rd.

My Car, to date, has given perfect satisfaction. I have taught myself to adjust it throughout, to the carbureter float. I have yet to be convinced that there is as good a Car in the market for the money, and I wish to congratulate you upon your success in designing a Car that is strong throughout,

Yours respectfully,
(Signed) EDWIN S. PHELPS, President.

OUR POLICY WILL NOT CHANGE.

We will continue to give "THE BEST CAR FOR THE MONEY."

In fact, next year we will give the best car at *any price.*

Our 1905 line will be complete—

RUNABOUTS—
LIGHT TOURING CARS—
HIGH POWERED TOURING CARS—

The best balanced, easiest selling line of Cars in the World.

We want live, reliable dealers to handle our line.

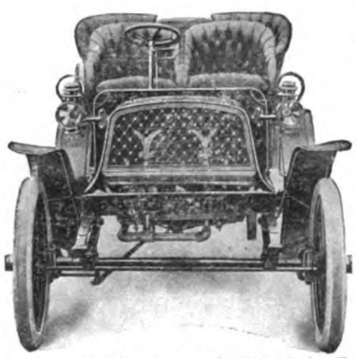
Better write before closing for 1906.

ACME MOTOR CAR COMPANY, Reading, Pa.

PREMIER

"The Quality Car"

DIRECT RADIATION.



If air cooling is not going to win out in 1905 stronger than ever, then we will have about 500 Premier cars on hand at the end of the season. Our 1904 record is clean and open, and 1905 Premiers are of the same general construction as the 1904 car, with an added refinement of details not to be found in any other light car made in America. If you are a possible purchaser of a motor car of quality, you owe your own best interests an examination and trial of the Premier. Think it over.

A few first-class agents wanted in open territory.

Premier Motor Mfg. Co.

INDIANAPOLIS, IND.

YOU CAN SEE YOUR FINISH

WHEN YOU USE

FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

A big and profitable seller to all jobbers, dealers and garages.

OUR PROPOSITION IS INTERESTING.

Send us a trial order.

FISK MFG. CO., Springfield, Mass.

KNOX WATERLESS COMMERCIAL CARS

A CONVINCING LETTER.

BOARD OF DIRECTORS,
BRINKS C. C. EXPRESS CO., City.

Gentlemen:—Below please find report of the Waterless Knox Gasolene Express wagon that we have had in use for 12 days and 12 nights. Eighteen hours divided into two shifts of 9 hours each, covering 150 miles per day of two shifts between Evanston, Oak Park and Woodlawn, and making between 6 and 8 trips during that time, not missing a schedule trip except one trip of two hours, when an electric car ran into the auto, dishing one wheel.

The machine used 20 gallons of gasolene a day of two shifts, or about one gallon for each hour run. When we put this machine on we laid off three wagons, twelve horses, and they have been off during that time, the horses being used elsewhere in the business. We used two of the men on the auto and dispensed with the services of the other man.

By an investment of $2,450 for this Knox machine we can improve deliveries in our business, get better service and save the cost of feeding above horses, one man's wages and the investment in the future of three wagons, harness, etc. We recommend the purchase of said auto.

Respectfully submitted,
A. P. BRINK, General Mgr.
Superintendent, W. B. WYNE.

CALL AT ANY OF AGENTS FOR A DEMONSTRATION.

Selling Agents in all principal cities.

IF YOU WANT SERVICE, BUY A WATERLESS KNOX.

KNOX AUTOMOBILE COMPANY, Springfield, Mass.

Members of Association of Licensed Automobile Manufacturers.



"CRANE" CAR
WITH PORTABLE TOP

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Some recent Races in which The Incomparable WHITE has participated.

EVENT.	CITY.	DATE.	H. P. OF WHITE.	H. P. OF ITS COMPETITORS.	RESULTS.
5 mile special, flying start.....	St. Louis	August 21	10	Up to 24	The White WON
5 mile special, 1,432-2,204 lbs.....	St. Louis	August 21	10	Up to 24	The White WON
5 mile open	Monterey	August 27	10	Up to 24	The White WON
2 miles, road equipment.....	Pittsburg	October 1	10	Up to 24	The White WON
2 miles, road equipment.....	Pittsburg	October 1	10	Up to 16	The White WON
5 miles, road equipment.....	Cleveland	October 15	10	Up to 24	The White WON
5 miles, open handicap.....	Cleveland	October 15	10	Up to 35	The White WON

Races and other competitions which are confined to stock cars can not failt to have more interest for motorists than any other motor competitions. The reliability of the WHITE Steam Car has been so repeatedly proven in official trials, both at home and abroad, that is has become a generally accepted fact all over the motor world that the WHITE is a really-reliable motor car. The speed of the WHITE is now frequently claiming attention, and recent victories of the WHITE Cars in stock races as above all point one way—to the speed of the WHITE Steam Cars on the road and on the track.

WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.

VEEDER ODOMETERS

are supplied as part of the regular equipment on the

KNOX
STEVENS-DURYEA
PIERCE
OLDSMOBILE
APPERSON BROS
NATIONAL
BAKER
BUFFALO ELECTRIC
GLIDE

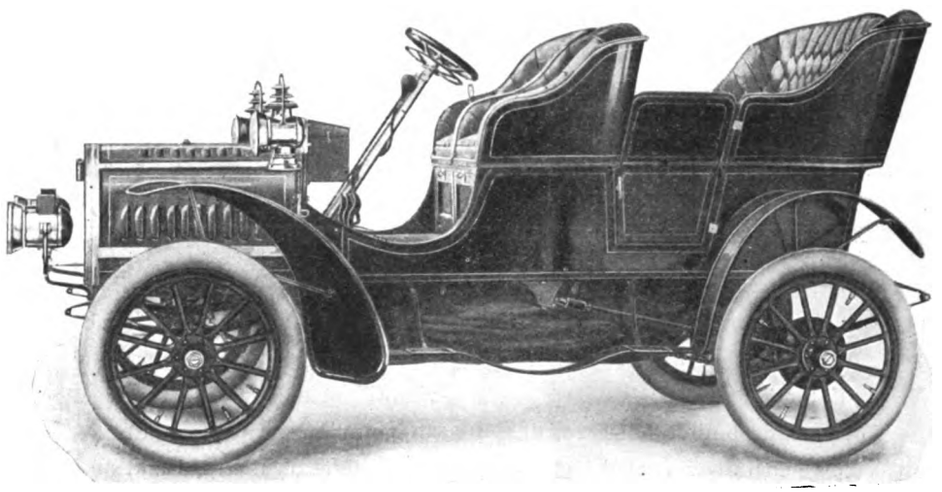
"It's Nice to Know How Far you Go."

THE VEEDER MFG. CO., - Hartford, Conn.

Makers of Cyclometers, Odometers, Techometers, Counters and Fine Castings.

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Rambler



SURREY, TYPE ONE. 1905 Model.

2 CYLINDERS, 16 H.P., $1350. IMMEDIATE DELIVERY.

Thursday afternoon, October 13, Arthur Gardiner, whose name was formerly well known on the cycle track, and who now is final tester of every RAMBLER car made, drove the writer in a new Surrey, Type One, for a twenty mile run about Kenosha. The country is perfectly flat, and the black soil makes poor roads, deeply rutted, so that this high speed run furnished no hill climbing, but plenty of spring and power testing, as a narrow, deep rut made by farm wagons in soft roads pinches pneumatic tires, and tests the springing by side crooks. Part of the time the car had four passengers and part of the time it was on very bad, soft, muddy, uneven roads, always riding very smoothly, without the slightest tremble of the free front ends of the mud guards, which is most convincing proof of entire absence of vibration, and always with abundant power to spare. The car is as still as it should be, silencing perfect, no bouncing, easy side swing, and prompt response in every particular of control.—HUGH DOLNAR, page 86, *et. seq.* *Cycle and Automobile Trade Journal*, November, 1904.

We shall be pleased to send you a copy of THE RAMBLER MAGAZINE, and other printed matter, free, upon request.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 304-306 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

NEW YORK AGENCY, 134 West 38th Street. REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, November 24, 1904. No. 9

DIAMOND ACQUIRES PATENT

And the Big Akron Rubber Company Will Promptly Produce Turnbuckle Tires.

What may or may not be a sign of the times, but what is undoubtedly full of suggestion, came to light this week, when it was learned that the Diamond Rubber Co. had obtained control of the Sherman patent, which covers a turnbuckle tire of the perfected Dunlop principle.

The patent, which was taken out by the Sherman brothers, a couple of physicians in Cleveland, Ohio, is said to be a basic one.

It is understood that the Diamond Rubber Co. will immediately add a tire of that type to their product, which is in line with their progressive policy of placing themselves in a position to meet any demand that may arise, or may have arisen.

The Diamond turnbuckle tire, it is stated, will be made interchangeable with the Dunlop turnbuckle rim.

Last of the Gasmobile.

Almost like a voice from the grave comes the announcement that Vice-Chancellor Stevens has directed Henry C. Cryder, receiver of the Automobile Co. of America, to make a final distribution of the assets of the insolvent corporation among its creditors. The sum to be distributed equals 2 per cent of the total liabilities and makes the total distribution among the creditors equal to 17 per cent of their claims.

The plant of the corporation at Marion, N. J., was sold to Richard C. Currier early last spring. The concern became embarrassed several years ago.

Wolverine Flirts With Terre Haute.

The Wolverine Motor Car Co., of Detroit, Mich., is dallying with the town of Fort Wayne, Ind., and thinks highly of the place as a location for a manufacturing establishment. Representatives of the concern were in Fort Wayne last week, seeking to interest local capitalists with a view to enlarging its operations and removing there.

Bankers Relinquish Two Stores.

While not entirely unexpected in the trade, it having been whispered that something startling was about to happen, the announcement that both the New York and Philadelphia stores of the Banker Bros. Co. will be closed will undoubtedly cause considerable surprise. The move is to be made at once, and the business will be concentrated at the Pittsburg establishment, which will continue to be managed by Arthur L. Banker.

The establishments to be closed are of an unusually pretentious character. The New York place is located on Thirty-eighth street, and is a very large and elaborately fitted up building. It was built especially for the sale and storage of automobiles, and was opened by Banker Bros. nearly two years ago. C. G. Wridgway was in charge as manager. The Philadelphia store was located on North Broad street, and was also a handsome and commodious establishment. Geo. A. Banker came from Pittsburg to assume charge of it.

Olds Departmentizes Business.

To facilitate the transaction of business the Olds Motor Works have divided the country into two departments, Eastern and Western, respectively, the Mississippi River being the dividing line. W. E. Stokes has been named as manager of the former, and S. S. Olds of the latter. Other department heads have been designated, as follows: Traffic department, J. J. Brady; railway inspection car department, R. T. Yates; repair department, C. E. Warner; accounting department, C. D. Hastings, and advertising department, Burton Parker.

Fisk Opens in New York.

The Fisk Rubber Co. is this week establishing a New York branch at 754-756 Seventh avenue—in the heart of the uptown automobile district. J. W. Bowman, hitherto in charge of the sales department at the factory in Chicopee Falls, will locate at the New York branch as general Eastern sales manager.

Twyman Becomes Sales Manager.

B. W. Twyman has been appointed sales manager of the Logan Construction Co., Chillicothe, Ohio. He was for a number of years connected with the Waltham Mfg. Co.

NEW YORK ALLOTMENTS

Two Hundred and Twelve Applicants Provided For—Where Their Exhibits Will be Located.

While knowledge that the demand for space at the New York show had required that each applicant be content with less room than he desired and then left a number of applicants unprovided for afforded a well defined idea of the extent of the exhibition of 1905, the list of exhibitors, which was made public this week, serves to more sharply outline the increase in the industry and in the immensity of the show.

In all, space has been apportioned to 212 applicants, of whom 104 are makers of complete vehicles. At the 1904 show there were 155 exhibitors of whom 89 displayed complete cars, and in 1903 the proportion was 76 out of a total of 143.

Those who obtained space and the spaces they obtained were as follows:

MAIN FLOOR.

(See diagram on page 343.)

A. J. Stevens Arms & Tool Co.
A. F. B. Stearns Co.
B. White Sewing Machine Co.
B. & C. Pope Mfg. Co. ¼
C. Elmore Mfg. Co.
C. Standard Motor Car Construction Co.
D. Olds Motor Works.
D. Buckmobile Co.
D. & E. Locomobile Co. of America.
D. Mitchell Motor Car Co.
E. Baker Motor Vehicle Co.
E. Worthington Automobile Co.
E. Kirk Mfg. Co.
F. Haynes-Apperson Co.
F. Waltham Mfg. Co.
F. Matheson Motor Car Co.
F. George N. Pierce Co.
F. Cadillac Automobile Co.
G. Ford Motor Co.
G. Reliance Automobile Mfg. Co.
G. Peerless Motor Car Co.
G. Corbin Motor Vehicle Corp.
G. Upton Motor Co.
H. Grout Bros. Auto Co.
H & I. Electric Vehicle Co.
H. Thomas B. Jeffrey & Co.
I. Autocar Co.
J. Northern Mfg. Co.
K. Duryea Power Co.
K. Phelps Motor Vehicle Co.
K. Apperson Bros. Automobile Co.
L. Automotor Co.
L. Winton Motor Carriage Co.
L. Knox Automobile Co.
M. Crest Mfg. Co. ¼
M. E. R. Thomas Motor Co.
M. Royal Motor Car Co.
N. American Motor Co.
N. Fischer Motor Vehicle Co.
O. Daimler Mfg. Co.
O. Vehicle Equipment Co.
P. Lane Motor Vehicle Co.
Q. Packard Motor Car Co.

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Q. Covert Motor Vehicle Co.
Q. National Motor Vehicle Co.
R. Smith & Mabley Mfg. Co.
R. Studebaker Bros. Mfg. Co.
S. Prescott Automobile Mfg. Co.
S. H. H. Franklin Mfg. Co.

ELEVATED PLATFORM.

T. C. F. Splitdorf.
T. R. E. Dietz Co.
T. Diamond Rubber Co.
T. G. & J. Tire Co.
T. Goodyear Tire & Rubber Co.
U. India Rubber Co.
U. R. E. Hardy Co.
U. N. Y. & N. J. Lubricant Co.
U. National Carbon Co.
U. Firestone Tire & Tube Co.
U. American Roller Bearing Co.
U. Whitney Mfg. Co.
U. Veeder Mfg. Co.
U. Columbia Lubricants Co.
U. Springfield Metal Body Co.
U. Parish & Bingham Co.
U. Weston-Mott Co.
U. Baldwin Chain & Mfg. Co.
U. Brown-Lipe Gear Co.
U. Midgely Mfg. Co.
U. Gray & Davis.
V. Briscoe Mfg. Co.
W. Morgan & Wright.
X. Badger Brass Mfg. Co.
X. American Ball Bearing Co.
X. Twentieth Century Mfg. Co.
X. Pittsfield Spark Coil Co.
X. Light Mfg. & Foundry Co.
X. American Coil Co.
X. Brennan Motor Co.
X. Phineas Jones & Co.
X. Dayton Electrical Mfg. Co.
X. Standard Welding Co.
X. Dow Portable Electric Co.
X. Timken Roller Bearing Axle Co.
X. Warner Gear Co.
X. Herz & Co.
X. Pope Mfg. Co.
X. Joseph W. Jones.
Y. Gleason-Peters Air Pump Co.
Y. Shelby Steel Tube Co.
Y. Hartford Rubber Works Co.
Y. Rose Mfg. Co.
Y. Fisk Rubber Co.

UPPER BALCONY.

1 & 2. Automobile Supply Co.
3. Scoville & Peck Co.
4. Dr. T. J. Cooper.
5 & 6. Scandanavian Fur and Leather Co.
7 & 8. Rushmore Dynamo Works.
9. Pneumatic Tire Protector Co.
10. Lukenheimer Co.
11. Columbia Nut & Bolt Co.
12. United Elec. Mfg. Co.
13. Trebert Auto. & Marine Motor Co.
14. Breeze Motor Mfg. Co.
15. Reliance Motorcycle Co.
16. Chas. H. Metz.
17. Hendee Mfg. Co.
18 & 19. Motor Car Equipment Co.
20 & 21. Continental Caoutchouc Co.
22 & 23. Demmerle & Co.
25 & 26. Edison Storage Battery Co.
27 & 28. D. McRay Livingstone.
29. Standard Oil Co.
30. De Lask & Throop Tire Co.
31. Wm. H. Brown.
32 & 33. Leon Rubay.
34. Chas. E. Miller.
35. Electric Contract Co.
36. Green, Tweed & Co.
37 & 38. A. H. Funke.
39 to 42. Post & Lester.

BALCONY EXTENSION.

America Co., Inc.
W. J. Duane & Co.
Wm. Roche.
Wm. Cramp & Sons Ship & Eng. Co.

EXHIBITION HALL (Basement).

A. Mack Bros. Co.
A. Chicago Automobile Mfg. Co.
A. Pierace Engine Co.
A. Central Automobile Exchange.
A. Jackson Automobile Co.
A. Austin Automobile Co.
A. Oscar Lear Automobile Co.
A. Warwick Cycle & Automobile Co.
B. Marble-Swift Automobile Co.
B. Lionel Norman.
B. Springer Motor Vehicles.
B. Caldwell Lawn Motor Co.
B. Reid Mfg. Co.
C. Marion Motor Car Co.
C. Lozier Motor Co.
C. Michigan Automobile Co.
C. Sturtevant Mill Co.
D. Welch Motor Car Co.
E. United Motor & Vehicle Co.
E. Buick Motor Car Co.
E. Upton Machine Co.
E. Punge Finch Auto. & Gas. Eng. Co.
E. Morse Motor Vehicle Co.
E. J. L. Dolsen & Sons.
E. Torbenson Gear, Inc.
F. Union Automobile Co.
E. Berkshire Automobile Co.
E. Toquet Motor Car & Construction Co.
F. Eisenhuth Horseless Vehicle Co.
G. Columbus Motor Vehicle Co.
G. Howard Motor Car Co.
G. Model Gas Engine Works.
G. Regas Automobile Co.
H. Bartholomew Co.
H. J. G. Parsons.
H. Standard Wheel Co.
H. Acme Motor Car Co.
H. James Brown Machine Co.
H. Warren Automobile Co.

RESTAURANT.

A. Premier Motor Mfg. Co.
B. Worthington Automobile Co.
C. Wayne Automobile Co.
C. Maxwell-Briscoe Co.
D. C. H. Blomstrom Motor Co.
D. H. H. Buffum Co.
D. Reo Car Co.
E. Commercial Motor Co.
E. Pope-Robinson Co.
F. Panhard & Levassor.
F. De Dietrich & Co.
F. Norris N. Mason, "F. I. A. T."
F. Palais de l'Automobile.

FIRST TIER OF BOXES.

39 to 51. New York Edison Co.
40. Hine -WattCo.
42 & 44. Whitlock Coil Pipe Co.
46. Hussey Drop Forge & Mfg. Co.
48 & 50. Sprague Umbrella Co.
52. Concentrated Acetylene Co.

CENTRAL BOXES.

Hyatt Roller Bearing Co.
(4th Ave. Central Box.)
Chas. E. Miller.
B. F. Goodrich Co.
(Madison Ave. Central Box.)
E. J. Willis Co.

CONCERT HALL.

A. Byrne, Kingston & Co.
A. Swinehart Clincher Tire & Rubber Co.
A. Cleveland Car Specialty Co.
A. Motsinger Device Co.
A. Carlyle-Johnson Machine Co.
B. The Tokheim Mfg. Co.
B. Autocoil Co.
B. Warner Instrument Co.
B. Wray Pump & Register Co.
B. Aurora Automatic Machine Co.
C. Hess-Bright Mfg. Co.
C. Detroit Steel Products Co.
C. Manufacturers' Foundry Co.
C. Pennsylvania Rubber Co.
C. Brown & Sharpe Mfg. Co.
C. S. F. Bowser & Co., Inc.
D. Imperial Wheel Co.
D. Federal Mfg. Co.
D. A. O. Smith Co.
E. McGeighan Odometer & Mfg. Co.
F. National Car Wheel Co.
G. Webb Co.
H. C. A. Metzger.
I. Steel Ball Co.
J. Oliver Mfg. Co.
K. Jersey Brake Co.

Jailed for Entering His Own Store.

Arrested for breaking into his own store, H. T. Eichenberger, secretary of the Pacific States Automobile Co., San Francisco, Cal., will fight to clear himself of the technical charge of burglary. Eichenberger purposely committed the offence with the object of testing the right of Attorney C. A. Low to put a padlock on the door of the store.

It seems that the company had borrowed $600 from E. T. Beck, a client of Low, and, so it is claimed, turned over its property to secure payment. The padlock was put on the door by Low, who had heard that Eichenberger was going to remove the cars in the store. Low notified the policemen to arrest any one who should attempt to break the padlock and enter the store.

Eichenberger says he was instructed by President Woolsey to break off the padlock and he got a blacksmith's hammer and did so, effecting an entrance. Just then Policeman Hook made his appearance and placed him under arrest. He says there are eight automobiles in the store. He was released on $1,000 bonds.

The Week's Incorporations.

Detroit, Mich.—Hammer Motor Co., under Michigan laws, with $10,000 capital.

Detroit, Mich.—Wayne Automobile Co., under Michigan laws, with $300,000 capital.

Chicago, Ill.—Tincher Motor Car Co., under Illinois laws, with $200,000 capital; to manufacture motor cars. Corporators—T. L. Tincher, M. B. Louis and M. A. Mayo.

Rochester, N. Y.—Seneca Automobile Co., under New York laws, with $10,000 capital; to manufacture motors. Corporators—F. H. Clum, G. W. Robeson and A. H. Dalzell.

New York, N. Y.—New York Observation Automobile Co., under New York laws, with $1,000 capital. Directors—M. B. Beckman, S. M. Fischer and A. D. Beckman, New York.

Chicago, Ill.—Bennett-Bird Co., under Illinois laws, with $10,000 capital; to manufacture automobiles and motors. Corporators—Arthur G. Bennett, George H. Bird and Mark Breedon, jr.

New York, N. Y.—International Auto Sightseeing Co., under New York laws, with $15,000 capital. Directors—Martin Oneill Galvin, Florence J. Sullivan and Thomas T. Graham, New York.

Waverley, N. J.—Hartford Suspension Co., under New York laws, with $100,000 capital; to make automobile appliances. Directors—E. V. Hartford, J. A. Hartford and A. G. Huffman, New York.

Hiland's New Officers and Quarters.

The salesroom and garage erected by the newly formed Hiland Automobile Co., of Pittsburg, Pa., is expected to be ready for occupancy this week. It is located at Baum and Beatty streets, and is a brick structure of substantial construction and with plenty of light.

Officers have been elected by the company as follows:

President, Dr. John A. Hawkins; treasurer, Dr. George A. Urling, and secretary, F. W. Anderson. Arrangements have been made to handle the Autocar line as a leader.

To Make Automobiles and Valves.

The D. T. Williams Valve Co. has been organized at Cincinnati to engage in the manufacture of automobiles and valves. A three-story building at Eggleston avenue and Broadway has been leased for a term of years, and will be utilized as a manufacturing plant. It contains 18,000 feet of floor space.

Penrose Goes With Fisk.

Morris Penrose has been designated manager of the new branch which the Fisk Rubber Co. will open in Cleveland, Ohio, early next month. He formerly represented the International A. & V. Tire Co. in Boston, and previously was for years connected with the Hartford Rubber Works Co.

J. P. Schneider & Co., of Detroit, Mich., have regained the agency for the Autocar. They had it a year ago and lost it.

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BOOKED FOR CHICAGO

Those Who Obtained Space at Western Show—Fifteen Applicants Crowded Out.

After paring the applications some 30 per cent each, so great was the demand for space at the Chicago show, February 4-11, that some fifteen would-be exhibitors were "left out in the cold"—five of them makers of cars. They are on the "waiting list," and will be taken care of only in the event of vacancies occurring.

In all there will be about 170 exhibitors at Chicago, of whom 80 will exhibit cars and 90 parts and accessories. The space available on the main floor is 39,509 feet, all of which will be devoted to complete cars.

The space in the gallery was allotted by a committee representing the Motor and Accessory Manufacturers. All of it was taken by members, so that it was necessary to abandon the restaurant, which has heretofore been on the second floor of the annex, for the benefit of non-members. Of the automobile exhibitors, an even score have never before shown at Chicago.

The notices of allotment were sent out on Saturday last for the main floor space, and the remainder on Tuesday. They will not be made public until acceptances are received.

The complete list follows:

AUTOMOBILES.

Acme Motor Car Co., Apperson Bros. Auto Co., Auburn Automobile Co., Austin Automobile Co., Autocar Co.

A. C. Banker Co., Bartholomew Co., C. H. Blomstrom Motor Co., Buick Motor Car Co., Burtt Mfg. Co.

Cadillac Automobile Co., Chicago Automobile & Mfg. Co., Chicago Motocycle Co., Coldwell Lawn Mower Co., Columbus Motor Vehicle Co., Covert Motor Vehicle Co., Crest Mfg. Co.

John L. Dolson & Sons, Duryea Power Co.

Electric Vehicle Co., Elmore Mfg. Co.

Ford Motor Co., H. H. Franklin Mfg. Co.

Haggmann & Hammerly, Haynes-Apperson Co., Holsman Automobile Co.

Jackson Automobile Co., Thomas B. Jeffery & Co.

Kirk Mfg. Co., Knox Automobile Co.

Locomobile Co. of America.

Marble-Swift Automobile Co., Marion Motor Car Co., Maxwell-Briscoe Motor Co., Mead Cycle Co., Michigan Automobile Co., Mitchell Motor Car Co., Model Gas Engine Works.

National Motor Vehicle Co., Northern Manufacturing Co.

Olds Motor Works.

Packard Motor Car Co., Peerless Motor Car Co., George N. Pierce Co., Pierce Engine Co., Pope Motor Car Co., Premier Motor Mfg. Co., Pungs-Finch Automobile and Gas Engine Co.

Regas Automobile Co., Reliance Motor Car Co., Reo Car Co., Royal Automobile Co., Royal Motor Car Co.

Simplicities Automobile Co., Sommer Motor Co., Standard Wheel Co., F. B. Stearns Co., J. Stevens Arms and Tool Co., St. Louis Motor Carriage Co., Stoddard Mfg. Co., Studebaker Bros. Mfg. Co.

E. R. Thomas Motor Co., Tincher Motor Co, Union Automobile Co.

Vehicle Equipment Co.

Waltham Mfg. Co., Welch Motor Car Co., White Sewing Machine Co., Winton Motor Carriage Co., Woods Motor Vehicle Co., Worthington Automobile Co.

PARTS AND ACCESSORIES.

American Roller Bearing Co., Aurora Automatic Machinery Co., Autocoil Co., Badger Brass Mfg. Co., Baldwin Chain and Mfg. Co., Beckley-Ralston Co., S. F. Bowser & Co., Inc., Brennan Mfg. Co., Briscoe Mfg. Co., W. H. Brown, Brown-Lipe Gear Co., Byrne, Kingston & Co., Chicago Battery Co., Chicago Rawhide Mfg. Co., Chicago Storage Battery Co., Continental Caoutchouc Co., Cullman Wheel Co., Dayton Electrical Mfg. Co., Detroit Steel Products Co., The Diamond Rubber Co., R. E. Dietz Co., Jos. Dixon Crucible Co., Dow Portable Electric Co., A. L. Dyke Automobile Supply Co., Electric Contract Co., Excelsior Supply Co., Fawkes Rubber Co., Federal Mfg. Co., Firestone Tire and Rubber Co., Fisk Rubber Co.

G & J Tire Co., B. F. Goodrich Co., Goodyear Tire and Rubber Co., Gray & Davis, Greene, Tweed & Co., R. E. Hardy Co., Hartford Rubber Works Co., Hendee Mfg. Co., Herz & Co., Hine-Watt Mfg. Co., William Hjorth & Co., Hyatt Roller Bearing Co., Imperial Wheel Co., India Rubber Co., Chas. Kaestner Mfg. Co., C. P. Kimball & Co., McGlehan Odometer and Mfg. Co., The Miller-Knoblock Electric Mfg. Co., Morgan & Wright, Motor Car Supply Co., Motsinger Device Mfg. Co., National Carbon Co., Oliver Mfg. Co., Pantasote Co., Pennsylvania Rubber Co., Pope Mfg. Co., Pneumatic Tire Protector Co.

Remy Electric Co., William Roche, Rose Mfg. Co., Shelby Steel Tube Co., C. F. Splitdorf, Sprague Umbrella Lamp Co., Standard Carriage Lamp Co., Standard Oil Co., Standard Welding Co., Steel Ball Co., Swinehart Clincher Tire and Rubber Co., Timken Roller Bearing Axle Co., The Tokheim Mfg. Co., Twentieth Century Mfg. Co., The Veeder Mfg. Co., Vesta Accumulator Co., Warner Gear Co., Warner Instrument Co., Webb Co., Whiteley Steel Co., Whitney Mfg. Co., E. J. Willis Co., Wray Pump and Register Co.

Woman Attaches Grout Exhibit.

Growing out of a sale made through an exhibit at St. Louis, Grout Bros., Orange, Mass., find themselves with a lawsuit on their hands.

The plaintiff is Miss Helen Walker, of St. Louis, who last week filed an attachment suit in the Circuit Court against Grout Bros. for $700. She alleges that she purchased for $700 on July 15 last an automobile from the company, which has an exhibit at the World's Fair. She states that it was guaranteed that the automobile was not difficult to handle, and that a lady could operate it. This was not the case, and the machine was changed for another one on September 21, it is stated.

The second machine, she charges, did not give satisfaction, and she demanded the return of her money, offering to return the automobile.

The Sheriff was instructed to levy upon the automobile, which is in Miss Walker's possession, and the company's World's Fair exhibit.

Small Fire in Detroit.

Fire originating in the office of the Wayne Automobile Supply Co., Detroit, Mich., last week inflicted a loss of about $200. It was put out before it reached the main building.

BUICK GETS LICENSE

Big Michigan Company Joins Selden Fold and Will Market Two Notable Cars.

Although it may not be realized by the rank and file of the trade, probably the most notable accession the industry has had in recent years is the enlarged Buick Motor Co. now of Flint and Jackson, Mich. Both in capital, largely increased facilities and in the accession of men whose names are synonymous with success in the big Michigan centres, the Buick Motor Co. are richly endowed.

As their plans gradually unfold, it will be seen that they are on a large scale, befitting the new resources of the company. It became known this week that they had acquired the Selden license, held by the Pope-Robinson Co., of Hyde Park, Mass., and they will therefore come before the trade as a full-fledged member of the Association of Licensed Automobile Manufacturers. W. C. Durant, the head of the big company, has been in New York for several days, during which the deal was negotiated.

The models to be marketed by the Buick Motor Co. will be two in number—one a touring car with a double-cylinder opposed motor 4½ by 5, developing 22 horsepower, with bevel gear drive and side entrance, which will list at $1,200; the other a two-cylinder opposed runabout of 16 horsepower, motor mounted in front, and listing at $750.

An idea of the scale of manufacturing which will be carried out by the Buick company may be obtained from the fact that it is the intention to utilize as much as may be necessary of the immense plants controlled by the Durant-Dort carriage industries, widely known to every one in the carriage trade. These plants comprise about a dozen in number and are superbly equipped and adapted to the manufacture of automobiles and all their component parts.

The Durant-Dort industries were planned on a large scale, and comprise factories for making axles, drop forgings, wheels, spring bodies and so forth, and, in fact, everything in the line of metal and wood parts.

The decision of Mr. Durant and his associates to enter the automobile field was made only after a careful investigation and a close watch of the industry for the past few years. They only awaited the time when it was felt that the experimental period of the automobile was over and it had taken its rightful place. Competent engineers were then secured, and on their report a controlling interest in the Buick Motor Co. was acquired.

Blomstrom Enlarging Plant.

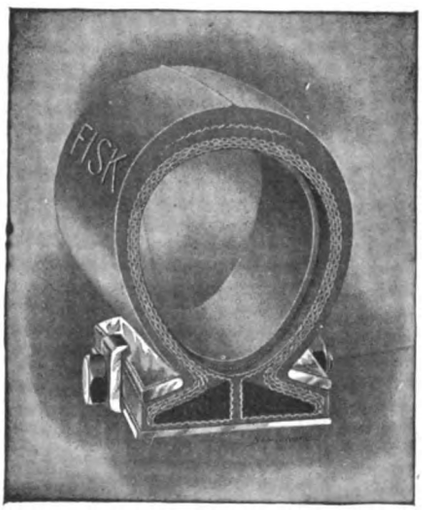
A $10,000 addition is being made to the plant of the C. H. Blomstrom Motor Car Co. of Detroit, Mich. The building will have a frontage of 100 feet, making the total frontage 350 feet.

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As we once before remarked, and as the past season strikingly demonstrated,

"If the rest of the Automobile is as good as the Fisk Mechanically-fastened Tires,

IT'S ALL RIGHT."



MADE BY

THE FISK RUBBER COMPANY,

CHICOPEE FALLS, MASS.

BRANCHES:

BOSTON,	BUFFALO,	PHILADELPHIA,	MINNEAPOLIS,
SPRINGFIELD,	DETROIT,	ATLANTA,	DENVER,
NEW YORK,	CHICAGO,	ST. LOUIS,	LOS ANGELES,
SYRACUSE,	SAN FRANCISCO,	OMAHA,	LONDON.

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Cowardice and Worse.

The man who, having caused an accident—whether it be in an automobile or any other vehicle—does not stop to learn the result, is a contemptible coward. The fellow who, having caused an accident, stops long enough to drag the unconscious victim to the side of the road and permits him to lay there, perchance to die, does not deserve to be termed a man—he is a cowardly pup. There can be not even a spark of fellow feeling for such a brute. He lacks even the first instinct of real manhood.

Such a thing attired in man's clothing committed such an offence on Friday night last on a road near New York. His victim, an aged man, was run into and knocked from his wagon and was then dragged to one side of the road, covered with a blanket and left there untended until he was discovered at daylight.

The suspected miscreant, a chauffeur on a midnight lark, is under arrest. But whether chauffeur or millionaire proves to be guilty, he merits no semblance of sympathy. He should be given the limit of the law's punishment; and even that will be inadequate. If there is any way in which the automobile organizations can become parties to the prosecution, they might prove their good faith with the public by doing so.

The accident, which happily will not prove fatal, should serve one good purpose. It should further the passage of the universal lamp law to which the Automobile Club of America has commited itself and which others before it had striven to have enacted.

Oil Drippings on Asphalt.

On a prominent Detroit street the other day several fire engine horses slipped and fell, while responding to an alarm. It is charged that the falls were due to the street being slippery from the dropping of oil and grease from automobiles; although others say it was frost that made the asphalt slippery. In other cities the same charge has been made against automobiles, viz., that they drop oil and grease on asphalt pavement and thus injure it, either temporarily, as by rendering it slippery, or permanently by rotting it. Buffalo talks of adopting remedial measures, and Chicago has an ordinance pending with a similar object in view.

That no case against the automobile has yet been established is quite true. It is doubtful whether one ever will be. No proof has ever been produced that oil or grease will rot asphalt, and we very much doubt that it does. A close examination of Thirty-eighth street between Broadway and Seventh avenue—New York's Automobile Row—leads us to this conclusion, for the asphalt pavement is apparently as sound as the day it was laid. Yet there is not a street in the world that is more given over to automobile traffic than it. All day long cars stand in double rows in front of the automobile stores which monopolize almost the entire block, and demonstrating cars pass over it by hundreds every day. The pavement is pretty well covered with grease, as it is never removed, but it does not appear to have any bad effect on the asphalt itself.

But whether it does or not this is begging the question. Suppose oil and grease did rot the pavement and cause it to need repair from time to time, what then? Is that any reason why repressive measures should be adopted against automobiles? The mere fact that they are used does not absolve authorities from the duty of cleaning streets. If automobiles drip oil, let the partment of street cleaning remove the just as they sweep up horse droppings other deleterious substances from all stre This may not be an easy job, for, of cou water alone will not remove the accumulat of oil and grease; but a satisfactory met can be devised if the attempt is made. cheap and easily applied solvent is not discoverable, and it is, or will be, the dut the authorities to discover one. Then work of cleaning can be proceeded with, as the removal of horse droppings is un taken now.

If the horse is definitely banished f city streets and the motor vehicle reigns preme there will be necessitated an enti different system of cleaning. That the n of a cleaning department will no longer e is an absurd supposition; its labor will tremendously decreased, but there will be work for it. As it is viewed now in s quarters, the withdrawal of the horse f streets like Thirty-eighth street carries it the withdrawal of the street cleaners. thing more ridiculous than this it would be easy to imagine. Streets should cleaned, whether they are encumbered horse droppings, rubbish or automobile pings.

The Matter of Repairmen.

Within the space of a few years swarm repair shops have sprung up all over country. Like Topsy, many of them growed," their proprietors frequently ac ing their brief amount of knowledge o pairing after they embarked in the busi Naturally, therefore, they have many s comings, and they make many mistakes. perience brings them knowledge, an course of time they become fairly profi in a rule of thumb fashion, and are ab successfully tackle all but the most dif and intricate jobs.

For a considerable number of years number of such shops is certain to incr No piece of mechanism can continue used without requiring repairs, and th creasing number of automobiles, com with the seeming prosperity of the r shops, will lure into the field a large nu of men who see in the new industry a for the display of their talents. Wheth not they possess the qualifications nece to win success is a question of overshi ing interest and importance.

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As is pretty well known, the fact that a man is an expert machinist does not necessarily qualify him to make a success of automobile repairing. Contrariwise, a man may be a good automobile repairer and only a fair machinist. Knowledge of the construction and peculiarities of a car sometimes count for more than a deft manipulation of metals. Still, a knowledge of the latter constitutes no drawback, and frequently it is a distinct advantage. Such jobs as, for example, reboring a cylinder or straightening a bent shaft in a lathe, are better placed in the hands of a full fledged machinist. A more workmanlike job is certain to result than if it were placed in the hands of a man of all work.

The trouble is to find such men. They usually have good, steady positions, and it would require an inducement greater than most repair shops can afford to make to cause them to relinquish them. So great is the difficulty that many shop proprietors give up the effort to obtain them and take instead the class of help that is available—i. e., the handy men, many of whom are the typical jack of all trades and masters of none. Yet that does not prevent their doing some classes of work quite as well as the best machinist that ever ran a lathe.

The only question is whether machinists will be induced to become automobile repair men or handy men be taught to do work equal to that of machinists.

The Chauffeur Problem.

The "chauffeur problem" has always been with us. It is akin to womankind's "servant girl problem." The increasing number of midnight accidents, due to chauffeurs out for a lark in their employers' cars and without their employers' permission, is evidence that this newest species of hired man is still at his old tricks and that the problem is not near a solution. It implies that the employers' system of "keeping tabs" on their "men" or cars, or both, is lacking, or that the garage in which the cars are stored are unworthy of the patronage bestowed on them.

The suggestion that the chauffeur's license be revoked in the event of trouble will not prove an effective remedy. He has but to cross a river or a State line to find employment elsewhere. The solution of the problem, if a solution is possible, rests with the employers. They should require references, and investigate the references before engaging a driver, and, if need, require weekly reports from the garage owner concerning the comings and goings of their cars. It should be made difficult for the discredited chauffeur to find employment and for the discredited garage to obtain customers.

Fall Sales.

In marked contrast to November of last year dealers are making both sales and deliveries of new models. There is no great volume of such business, and some dealers have as yet had no shipments from the factories; but most of them have been getting cars by ones and twos and threes, and have little difficulty in finding purchasers who will take them and put them into commission at once.

The continued mild and fine weather has had a great deal to do with this tendency to make early purchases. The temptation to buy is much less when roads are bad, temperatures low and winds biting than when glorious fall weather prevails and reaches out an alluring, even a compelling, hand. The new model might be displayed ever so attractively on the salesroom floor, and it would never feaze some motorists; they would wait until the open road calls them, and only then conclude their bargain by entering into actual possession of the car.

The early arrival of 1905 cars is also proving a godsend to dealers who are handling lines that they sold this and previous years, and especially where such cars have given satisfaction. The motorist who experienced trouble during the last season, and is of the opinion that the car and not himself was to blame, may be persuaded to invest in a new model of the same make, but only after much labor and after he has seen enough of the running of a car to convince him that it really has been improved and the defects of the past eradicated. No amount of coaxing will avail to bring him to the point of definitely committing himself now by purchasing and putting into service one of the new models. As he would put it, he has cut his eyeteeth, and next time will look before he leaps, be sure before he buys.

An almost equally hopeless task is that of convincing a customer that it would be wise for him to accept delivery of a new make of car. Circumstances may have arisen that render it advisable, or even necessary, for the dealer to switch him over from one make to another. The customer may be willing to take the dealer's word that the car is, like Cæsar's wife, above suspicion and all that it should be. But he prefers to wait until spring before taking the plunge. Then the fever will be on him and he will have had an opportunity to examine other cars and compare them with the one he has decided to buy; but until then he prefers to remain free, or bound only so far as is implied by the placing of an order, with, perhaps, the deposit of a portion of the purchase money. And this is the case even when he has no intention of backing out of his bargain.

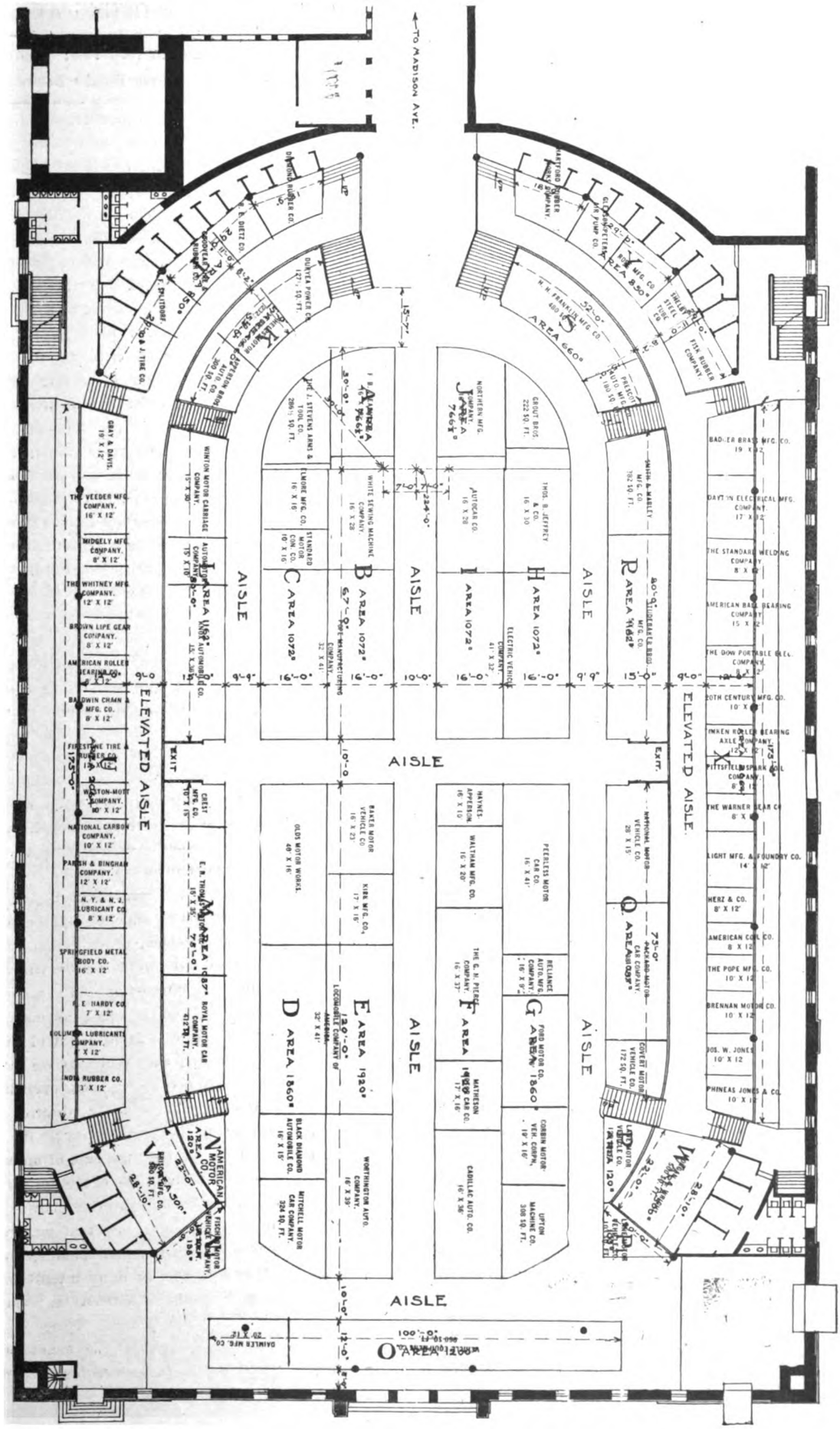
But the customer who merely proposes to change a 1904 model for a 1905 one is not so finicky. All he wants is to be assured that he is really getting a 1905 model, and he will consummate the bargain without hesitation. The dealer who can give him this assurance, and who is receiving even small sized shipments, is doing some business, even if winter is almost on us.

Like the poor, the dirty, ill kept garage is always with us. Animadversions in plenty have been levelled at them, and the necessity of maintaining establishments where people of refinement and breeding can enter without entertaining feelings of repulsion or disgust pointed out. And garage keepers listen and assent or turn a deaf ear as they please, with a like result in either case—an indifference to and disregard of the friendly remonstrance or advice.

Such places are distinguishable at a glance. The reek of tobacco smoke and stale oil meets one at the door, and is reinforced by the sight of oil stained floors, dirty cars and a litter of articles that should be kept out of view. There are no chairs or other places in which to sit while waiting for a car to be made ready. You have to stand and close your eyes and ears to the repugnant spectacle as best you can.

The statistics supplied by the Automobile Club of America, proving that violation of the speed law by horse drawn vehicles is common, is interesting and is valuable chiefly because it specifically confirms a matter of common belief. It is doubtful that it will serve its purpose. When, as we have several times instanced, horsemen, cyclists and automobilists alike frankly admitted at a public hearing in the New York City Hall that a violation of the legal rate of speed was the rule rather than the exception on the part of each of their respective classes of travel, and pleaded for a law that was really possible of obedience, their plea was resolutely opposed by even such an intelligent and respectable body of citizens as comprise the West End Improvement Association. When such men object to the enactment of an honest law there is small hope of betterment.

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HOW THE CHOICEST SPACE OF NEW YORK SHOW HAS BEEN APPORTIONED.

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FERRY OWNERS FILE REPLY

No Spark in the Automobile While Boat was in Motion the Burden of Response.

No especially new points are brought out in the answer of the Brooklyn Ferry Co. to the libel filed against the steamer Texas by United States District Attorney Burnett on November 7. The answer was drawn up by Herbert Green, of Wilcox & Green, No. 1 Broadway, and was filed on November 19. It asks for the dismissal of the libel on two grounds, first, that there was no fire in the machine while it was being transported, and, second, that the gasolene in the tank of the machine was not carried as freight. Stress is laid upon the fact that the engine was stopped before the Texas left her slip, and that it was not started again until the boat was made fast to the slip at the foot of Broadway, Brooklyn.

The first part of the answer admits, in legal phraseology, of the truth of the first five parts of the libel. These were devoted to a recital that the Texas is within the court's jurisdiction, carried passengers in the East River, and was owned and operated by the Brooklyn Ferry Co. The fourth part of the libel quoted the law on the subject, and the fifth told that the law was in force on October 14.

The sixth part of the answer is as follows:

"Denies that the gasolene mentioned in the sixth article of the libel was carried by the ferryboat Texas as freight; also denies that there was a fire in the motor vehicle therein mentioned which was not extinguished before the vehicle entered the vessel on the occasion referred to in said article; denies that a fire was relighted in said vehicle before it left the vessel at the foot of Broadway, Brooklyn, and also denies that there was any fire whatsoever in said vehicle on said occasion; and admits the remaining allegations contained in the sixth article of the libel."

The seventh and eighth parts deny the allegations contained in the correspondingly numbered parts of the libel. The ninth part is as follows:

Further answering, claimant alleges, upon information and belief, as a distinct and separate defence:

"Section 4,472 of the Revised Statutes, which incorporated an act of Congress of February 28, 1871, originally contained no reference whatsoever to automobiles or motor vehicles, but by an amendment which became a law February 20, 1901, the following was added thereto, which appears in said section of the Revised Statutes as set forth at length in article fourth of the libel:

"'Nothing in the foregoing or following sections of this act shall prohibit the transportation by steam vessels of gasolene or any of the products of petroleum when carried by motor vehicles (commonly known as automobiles) using the same as a source of motive power; Provided, however, that all fire, if any, in such vehicles or automobiles be extinguished before entering the said vessel, and that the same be not relighted until after said vehicle shall have left the same: Provided, further, that any owner, master, agent or other person having charge of passenger steam vessels shall have the right to refuse to transport automobile vehicles the tanks of which contain gasolene, naphtha or other dangerous burning fluids.'

"At the time said amendment became a law automobiles or motor vehicles using gasolene as a source of motive power, commonly contained a fire giving forth a continuous flame which was essential to the creation of the power used to propel such vehicles.

"The motor vehicle or automobile numbered 11,119, referred to in the libel, was equipped with a securely closed metal tank containing not more than ten gallons of gasolene, which was used as a source of motive power for the propulsion of the vehicle. The tank was securely affixed to the rear of the vehicle. (The method of producing the power required to propel a gasolene automobile is then described.)

"On the occasion mentioned in the libel, and while the ferryboat lay in its slip at East Twenty-third street, Manhattana, made fast to the ferry bridge, the vehicle entered the ferryboat, and traversed the length thereof in the horse gangway, under its own power, produced as hereinbefore described, and then, and before the ferryboat started on her trip, the said electric current was instantly broken and said sparking ceased. Said current remained broken, and said sparking suspended, throughout the trip of the ferryboat and until she was made fast to the bridge in her slip at the foot of Broadway, Brooklyn, at the termination of the trip, when said current was again made, and said sparking resumed, for the purpose of permitting the vehicle to leave the ferryboat under its own power."

The answer winds up with a petition that the libel be dismissed with costs. It is sworn to by Joseph J. O'Donohue, jr., president of the Brooklyn Ferry Co. The case will be called in the U. S. District Court for the Southern District of New York on December 6, at which time a day will be set for its trial.

Discussed Anti-Freezing Solutions.

Anti-freezing mixtures occupied the attention of the members of the Milwaukee Automobile Club last week, when they held the first of a series of winter meetings, at which popular subjects will be discussed.

Dr. Louis Fuldner read a paper, discussing various solutions, and a general expression of opinion followed. The proper solution of calcium chloride, according to the experience of those who advocated its use, is four pounds to a gallon of water. This solution will not freeze above a temperature of 30 degrees, and does not injure the tubing. A 60 per cent solution of pure glycerine stood next in favor.

Experiments will be tried by the members to determine the relative value of solutions and the proper percentages to use.

TILTING AT AIR SHIPS

None in New York, but that Does Not Worry These Tilted "Democratic" Motorists.

That unique organization, the New York Motor Club, in which *"democratic" motorists form the backbone of the membership, is progressing. Its last meeting, instead of being held in the drink dispensary of the hotel in which the previous gatherings occurred, was held in the office of a brokerage firm which is on the street floor. (*"Motorists" who do not own motors.)

Although most of the members actively concerned with the club style themselves newspaper men, they left word with the hotel clerk that no newspaper men be admitted to the meeting. It is understood that the former six-day professional bicycle rider, who is most active in the promotion of the club, is very much excited and exercised over the failure of some of the papers to take the organization seriously.

The purpose of the meeting was supposed to be the adoption of a constitution and by-laws, but the handful present killed time by discussing whether or no owners of airships should be admitted to membership. The discussion provoked a great deal of amusement and some opposition, but Sidney B. Bowman carried the day when he remarked that to include "hot air" ships would be the means of obtaining a lot of advertising. This idea prevailed, and all of the very many hundreds of New Yorkers who keep such craft in their hall bedrooms will doubtless apply for membership. It is also stated that resident membership will be limited to Greater New York. Incidentally, the six-day professional bicyclist is not a resident of New York. Non-resident dues, of course, will be much cheaper than those of resident members.

For some reason or other the meeting deemed it wise to postpone the election of officers. It is popularly supposed that they are seeking men who own motors, and who are not connected with the trade. At any rate, they merely chose nine directors who, it is said, wil hold office until the first annual meeting, which will occur next month. By that time, it is hoped that men whose interest extends to the purchase and use of motors will be found to grace the executive offices. Meanwhile, it is announced that "a vigorous campaign for members is to be made."

Although he forms one of the directors, it is not known whether the "campaign" includes an arrangement with the ex-professional bicyclist such as he, like a truly patriotic member, effected with the American Motor League, or its president, I. Potter, who is also a "democratic" director—that is, a "rake off" for every member he was able to obtain.

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ORMOND EVENTS OPEN

Axe-Grinding Attempt to Restrict Entries is Defeated—President Burgoyne Speaks.

C. G. Burgoyne, president of the Florida East Coast Automobile Association, saw a great white light late last week. As a result the Ormond carnival will be open to the whole wide world.

It proved a rude shock to the former professional participant in six days' bicycle "grinds" who manages the carnival. He had been given absolutely free hand in previous years, and had made the most of it in many ways. Because of differences—not all of them growing out of the Ormond function—he this year proposed to "fix" certain men. Even in his bicycle days he made history because of his aptitude in that line. But this time he proposed to "fix things" so that none with whom he was at odds could compete at all. Accordingly he announced that entry to the Ormond events would be by invitation only; and, of course, he would issue the invitations, or pass on them, at any rate. As it proved, he overstepped the bounds, and when President Burgoyne reached New York it did not take him long to discover that a mighty storm had brewed and was almost ready to break.

Mr. Burgoyne, a New York business man, whose health makes it necessary for him to live in Florida most of the year, came to New York recently for the purpose of securing members for the Florida East Coast Automobile Association. He had seen but very few of the men whose names he hoped to add to the list of members before he began to realize that a big mistake had been made in making the carnival an invitation affair, with the inviting power in the hands of the manager. The further he went, just so much more decided did his opinion become that the name and success of the carnival were in peril. He was not slow to act. Without waiting to consult the manager, he sent the following telegram to the association, which was in session at Daytona:

"Instead of restricting automobile races at Ormond-Daytona Beach, January 23 to 28, to invitation only, open them to the world at all standard distances from one mile to one hundred miles."

The answer came back at once, as follows:

"Have adopted your resolution verbatim. The races will be open."

What the manager said when he heard the news is not recorded, nor does it matter.

"My real business in New York was to promote the membership of the Florida East Coast Automobile Association, and I did not intend to bother with the races," said Mr. Burgoyne last Tuesday to a Motor World man. "I do not know much about racing, but so many men told me that a mistake had been made in not throwing the entry list open to the world that I was convinced that something had to be done. So I at once sent the telegram to the association, recommending that the events be thrown open, and received word at once that the invitation rule had been abolished. I do not know why the invitation rule was adopted. Some one made a motion to that effect at a meeting, and it was carried without discussion. I was surprised at the feeling the rule had caused.

"The Association now has a fine list of members. Some of the gentlemen who have joined since I came here are W. K. Vanderbilt, jr., Colonel John Jacob Astor, W. Gould Brokaw, S. B. Stevens, H. L. Bowden, E. R. Thomas, Colonel L. C. Weir, Florence O'Neil, of the Pittsburg Dispatch, and E. M. Steck, of Philadelphia. I sent in the applications of President Whipple of the American Automobile Association and F. A. La Roche a few days ago by wire, and have sent an invitation to B. M. Shanley, jr., of Newark, N. J., to become a member, but have not heard from him since. Henry M. Flagler joined our ranks about two months ago, and there are more prominent men coming in right along.

"Ormond Beach will be the future automobile playground of the world. Why, in July and August I can run my car as fast as it will go for an hour without even making the tires warm. I think there will be six thousand people down there next January to witness the races. The spectators can see most of the events without being in danger in case of accident. I live in Daytona, and in that city alone there are accommodations for two thousand more people than were there last year. Being the head of the association takes a lot of time, and I shall not be a candidate for re-election next year, but will go to Europe for a rest."

Sweden's Race Meet on Ice.

The Automobile Club of Sweden is making preparations for a race meeting on the ice of a fjord near Stockholm this winter, and has invited the owners of fast cars in other countries to enter the competition.

The Swedes have always been partial to winter sports on an extensive scale, and their plans for the automobile races include many different classes. It is proposed to hold the meeting in February, and the place that has received most favorable consideration is at Djursholm, an island in a fjord about eight miles north of Stockholm. An extensive course has been mapped out there, and already a cup valued at $275 has been offered. Events for racing and for touring cars are to be on the schedule, and to induce owners of cars to enter the club is trying to secure reduced rates on the railroads.

There are now very few high powered vehicles in Sweden, but it is hoped that cars will be entered which will reduce the record of 39 2-5 seconds for a mile, made by Henry Ford on Lake St. Clair in this country last winter.

MORRIS ELECTED PRESIDENT

Succeeds Scarritt as Head of A. C. A.—Latter Presents Interesting Data Concerning Speeds.

At the annual meeting of the Automobile Club of America, held in this city on Monday night, the full ticket prepared by the nominating committee was elected without opposition. It was made up as follows:

President, Dave Hennen Morris.

First vice-president, Colgate Hoyt.

Second vice-president, William K. Vanderbilt, jr.

Third vice-president, Clarence Gray Dinsmore.

Treasurer, Samuel H. Valentine.

Governors, to serve three years, James L. Breese, Melville D. Chapman and Harlan W. Whipple.

With the exception of Mr. Vanderbilt, who is advanced from the second to the third vice-presidency, the officers are all new. All except Mr. Valentine, however, have served the club as governors. Mr. Morris has been prominently identified with the management of the club, having served as a governor and as chairman of the racing committee for several years.

In his valedictory address retiring president Scarritt showed the club to be in a highly prosperous condition. Incidentally he brought out some interesting data regarding the strength of the club. Within the last year the roll has been increased by 165 new members, which had increased the revenue for the year by more than $20,000. The total membership is now 589, of whom 461 are active, 127 associate and one a life member.

In reviewing the services in the interests of automobiling accomplished by the club during the year, Mr. Scarritt gave interesting statistics concerning speed in Central Park and in other parts of the city. As a consequence of unjust discrimination in the arrest of automobilists in the park, he said, the club employed expert timers to ascertain the speeds of motor vehicles and horse drawn vehicles over surveyed courses in the park, in Riverside Drive and in Fifth avenue. The measured routes were each one-eighth of a mile in length, and the timers were employed for parts of fourteen days between 9 o'clock in the morning and 5:30 o'clock in the afternoon.

Of 437 horse drawn vehicles timed the highest rate of speed was 22.5 miles an hour, the lowest rate of speed 8.05 miles and the average rate 12.28 miles. Not a single arrest of a driver of a horse drawn vehicle was made for exceeding the speed limit of eight miles an hour.

Of 106 automobiles timed over the same courses the highest rate of speed was 21.42 miles an hour, the lowest 8.83 miles and the average 16.65 miles an hour. Arrests of automobilists for travelling at these rates were of daily occurrence, though Mr. Scarritt pointed out that an automobile going at six-

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teen miles an hour is under much better control than a horse trotting at twelve miles an hour, and can be stopped within one-third the distance.

On Tuesday night Mr. Scarritt gave a dinner at the Waldorf-Astoria to President Morris, at which most of the retiring governors and their successors were present. A surprise for the host came near the close of the feast, when Mr. Morris exposed to view a magnificent $500 loving cup, and in a few well chosen words presented the cup to Mr. Scarritt as a mark of appreciation, on behalf of the governors, of the ex-president's valuable services during the past year. Mr. Scarritt, although taken entirely by surprise, responded in a most gracious manner in acknowledgment of the gift.

Colonel John Jacob Astor, Peter Cooper Hewitt, Harlan W. Whipple, president of the American Automobile Association; Albert R. Shattuck, the predecessor of Mr. Scarritt as president of the Automobile Club of America, and George F. Chamberlin were among the guests. A number of speeches were made, but they were informal in character.

It is expected that Mr. Scarritt will be reelected to the vacancy in the board of governors caused by the elevation of Mr. Morris to the presidency.

The annual banquet of the club will be held at the Waldorf-Astoria on January 21, the closing night of the show at Madison Square Garden.

Arent Ready for Business.

After a long and at times uncertain appearing struggle with the Grim Reaper, Geo. Arents, Jr., one of the victims of the only serious accident in the Vanderbilt Cup race, is well along on the road to recovery. It is expected that he will be able to resume the management of his business affairs next week. He is still at the Garden City Hotel, where he was removed from the Nassau County Hospital, but will be able to leave there in a few days.

Beyond the fact that his mind is a total blank on the subject of the accident and the killing of his mechanician, Carl Mensel, Arents's recovery is complete. His memory is, with the exception noted, perfect and his physical condition leaves nothing to be desired.

Odell's Joke on Hill.

A letter from Elmira, N. Y., tells a story concerning David B. Hill and his opinion of automobiles:

Not long ago Mr. Hill was dining with ex-Governor Odell at a club in Albany (socially they are very good friends). The Governor had just purchased a new automobile, and he said to Hill:

"Why don't you buy a machine?"

"I would not rent one and I do not care to own a machine I could not manage," was Hill's answer.

Odell looked at him reproachfully and asked: "Has not that always been your trouble, Hill?"

NEW HAVEN MOTORISTS' MECCA

Big Football Game the Magnet that Attracted Them—Speed Laws Variously Interpreted.

One of the greatest gatherings of automobiles that ever took place in this country was seen at New Haven last Saturday, when the Yale-Harvard football game took place. They came from places as far away as Boston on the north and Philadelphia on the south, and the checkerboard bit of turf on which the doughty warriors were to do battle for their alma maters was the Mecca of all.

Few of the cars arrived at New Haven the night before the game. It is well known that the town is always full to overflowing on Friday night, and that accommodations are not to be had unless they have been engaged long beforehand. On this account a number of the cars—and especially those coming from a distance—were driven to nearby towns, such as Hartford, Springfield, Bridgeport, etc., and then driven to the college town on Saturday morning in ample time for the game. In other cases early morning starts were made from New York, and even Boston, and the intervening miles traversed at a rapid gait.

The day of the annual football game is the one day of the year when Connecticut's draconian speed laws are relaxed and the exultant motorists permitted to open up and cut loose without further interference than a warning finger or an expostulatory utterance from the watching constables. Saturday was no exception to the rule. Big touring cars were the popular types, and the roads for miles on each side of New Haven were alive with them. Loaded to their full capacities with happy, laughing parties of pleasure seekers, a large proportion of whom were of the fair sex, and making a brave show of crimson or blue, they tore along, devouring hills as if they did not exist and rushing along the levels at railroad speed. Some remarkable performances were made. One of the best runs of the day was made by George Sykes, of Rockville, Conn., who made the fifty-seven miles from that city to New Haven in 1 hour, 35 minutes. Senator Maxwell's car, driven by Chauffeur Roberts, is said to have gone from Hartford to New-Haven, forty-two miles, in 1:10. James Joyce in a Columbia car, with a party of five friends, went to the green in New Haven in 1:14, while M. J. Budlong's car, driven by Bert Holcomb, made the distance in the same time with a well loaded car, with top and glass wind shield in front.

But if the Nutmeg State officials were leniently disposed, it was not so with their fellows over the New York border. At Rye, for example, preparations were made to celebrate the day by "laying for" speeding motorists, and a big haul was made. The twenty constables sworn in by the village officials continued until after midnight Saturday to arrest automobile parties going and returning to New York from the game at New Haven. The record for the day was twenty-two arrests, which yielded a revenue of $315 to the village treasury in fines.

Eleven of the car owners were held up while on their way to the game, and eleven were stopped returning at night. Judge Wilcox sat up nearly all night holding court in a small house near the roadside.

Woodbury on Street Cleaning.

How asphalt pavements should be cleaned is explained by Commissioner Woodbury, of this city, in a letter sent in reply to one from Chairman John C. Eames of the Merchants' Association Committee on City Conditions.

"There is but one way to sanitarily cleanse asphalt pavement, and that is by thoroughly washing the surface with water," he says. "I mean by washing the surface applying the water to the asphalt with a sufficient degree of force to thoroughly scour all the loosened gum which so tightly clings to the asphalt in every month of the year in dry conditions. This can be done every day in the year when the atmospheric temperature is above 45 degrees Fahrenheit, and should be done at night or at such times as there is little or no traffic upon the streets.

"If water is delivered upon the asphalt at an angle of 45 degrees, with a muzzle velocity of forty pounds of pressure to the square inch, it is found that all of the gum, which is due to the compression by wheels of heavy or rapidly moving traffic of materials dropped upon the surface, is thoroughly washed away and a clean asphalt surface exposed, which is not slippery and which permits a good footing for the horse or traction for motor vehicles."

Placques for Bennett Cup Winner.

Past, present and future holders of the Bennett Cup will hereafter have in their possession something of an enduring character. The donor of the cup, James Gordon Bennett, has offered to give all winners handsome silver plaques. These plaques will bear a silver reproduction of the cup, with a suitable inscription, and are to be given to the winning clubs as a permanent reward. Each club can obtain only one of these trophies, hence only three have been ordered, which will be handed to the French, English and German Automobile clubs, respectively.

Ford to Build Big Racer.

Henry Ford is building an eight cylinder racing car of 80 horsepower that will weigh only 1,300 pounds, according to a report from Detroit. The new car and the little machine with which Kulick scored so heavily at the Empire City track on Election Day are both to be sent to Florida for the Ormond races. Ford thinks the small machine capable of a mile on a circular track in 51 seconds. The big car is said to be nearly completed, and is expected to be ready for its trial spins the first week of December.

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NEWARK'S MATINEE MEET

"Free Show" That Interested Six Thousand and Was Held Safe by Provid nce.

Some unusually close contests were witnessed at the first annual race meet of the New Jersey Automobile and Motor Club, held last Saturday on the old fair grounds track at Waverley, N. J. Several times was the spectacle of two cars going the entire distance of a race, at no time more than a length separating them. Though the track is a half mile one and not very wide, five cars were started in one event and six in another without the slightest accident. It seemed as if Providence had that particular part of the country and its temporary inhabitants under its special care, for few things were omitted in the way of running needless risks. While races were being decided, contestants in later events were permitted to go out on the track and "warm up" their cars, there being at one time three practising cars out, while one of the races was on. The fence on the outside of the track was lined with spectators almost for its entire distance.



ONE OF THE MATINEE EVENTS.

Bernard M. Shanley, jr., a former president of the organization and the present owner of the 90 horsepower Mercedes with which W. K. Vanderbilt, jr., established the mile straightaway record of 39 seconds, had been one of the prime movers in the promotion of the meet. It was no small task the club undertook, as the track is in a public park, and no admission could be charged. Not only were seats in the grandstand free, but well printed programmes were distributed without charge. The club also provided a good band of music. The track is in a little valley, and the surrounding low hills served as a point of vantage for many of the six thousand spectators who witnessed the contests. Mr. Shanley acted as starter, and the murderous appearing "young cannon" he used was a source of mingled delight and dread to the small boys who were crowded on the fence behind him.

Just before the last races of the day, Mr. Shanley gave an exhibition with his big Mercedes. A new body, built very low and with but two racing seats, has been put on the chassis. The whole affair—bonnet, wheels and all—has been painted a bright green, and when it drew up in front of the stand before the exhibition, the band struck up "The Wearing of the Green." Mr. Shanley has not adopted the crouching position assumed by Oldfield and others when driving his car at speed, but leans back in his seat as did Fournier when he made his mile straightaway record on the Coney Island Boulevard in 1901. Though he had tried his car but once on the Empire City track and once the day before at Waverley, he made very good time for the half mile course. He took the short turns without skidding and seemed to enjoy his work. He had intended to go five miles, but a gasket blew out at four and one-half miles.



STARTER SHANLEY AND HIS GUN.

The ten-mile race for the cup donated by Mr. Shanley was free to all cars costing not more than $6,500. It had six starters, all in one heat. These cars were the new Speedway of J. H. Amory, with a 24 horsepower Seabury engine; a 40 horsepower Thomas Flier which had M. Roberts as its driver and Fred J. Titus as a passenger; the New York-Chicago record holding Columbia, a 12 horsepower Autocar, a 16-horsepower Locomobile and a Decauville of the same power. The Thomas, which had its muffler connected, gained from the very start, and won by almost three-quarters of a mile. The Speedway and the Locomobile had a great brush, the former taking second place by a length.

The new Thomas, which was entered by H. S. Haupt, the New York agent, ran beautifully for the entire ten miles. It was so silent that it could hardly be heard from the grandstand when it rushed through the homestretch. Roberts did not attempt any fancy driving, but kept near the outside fence most of the time, so he could get around the turns easier. When Roberts gained his lap on the Speedway and the Locomobile he passed them in front of the grandstand, while the spectators yelled their delight. The new Speedway had but one wide seat on it, and the seat and bonnet both had a decidedly "home made" appearance. The Columbia "Betsy II," which is being used by a Dunlop tire demonstrating crew through New Jersey, was not



THE THOMAS CAR LEAVING THE BUNCH.

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in the best of racing condition, and did not finish the ten miles.

Summaries:

Three miles, stock cars costing from $500 to $750; regular equipment—Won by I. M. Upperc (8¼ horsepower Cadillac); F. Evenden (4 horsepower Oldsmobile), second. Time, 6:48½.

Three miles, single cylinder motor bicycles, stock machines—Won by W. H. Cornwell (Indian); Joseph J. Boland (Special), second. Time, 5:03 1-5.

Five miles (trial heats at three miles); stock cars costing from $750 to $900; regular equipment: First heat—Won by A. W. Stockbridge (12 horsepower Michigan); I. M. Upperc (8¼ horsepower Cadillac), second; Clarence Fisher (10 horsepower Autocar), third. Time, 5:36 2-5. Second heat—Won by R. T. Newton (10 horsepower Autocar); C. H. Gillette (10 horsepower Pope-Hartford), second. Time, 6:03 1-5. Final heat—Won by Newton; Stockbridge, second. Time, 8:54 4-5.

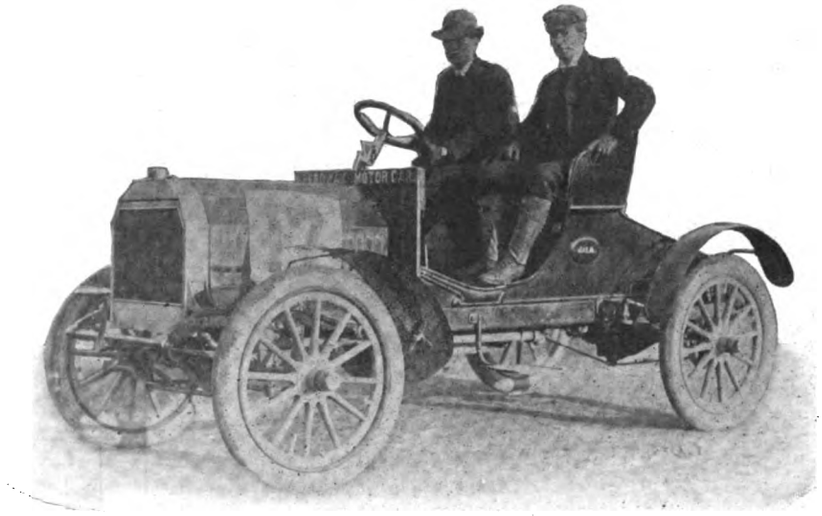
Three miles; stock cars costing from $950 to $2,000; regular equipment—Won by A. W. Stockbridge (12 horsepower Michigan); W. I. Fisk (9 horsepower Locomobile), second. Time, 5:51.

Five miles; light touring cars costing from $750 to $1,700, each to carry four passengers of 125 pounds average weight—Won by A. W. Stockbridge (12 horsepower Michigan); L. J. Wyckoff (10 horsepower Franklin), second; I. M. Upperc (8¼ horsepower Cadillac), third. Time, 9:25.

B. M. Shanley, jr., Cup; ten miles; stock cars costing less than $6,500; regular equipment—Won by M. Roberts (40 horsepower Thomas); J. H. Amory (24 horsepower Speedway), second; Edward Strasser (16 horsepower Locomobile), third. Time, 15:55.

Frederick R. Pratt Cup; five-mile handicap; stock cars costing less than $6,500—Won by J. H. Amory (24 horsepower Speedway; scratch); Edward Strasser (16 horsepower Locomobile; scratch), second; A. W. Stockbridge (12 horsepower Michigan; 6 seconds), third. Time, 9:10.

Exhibition by B. M. Shanley, jr. (90 horsepower Mercedes car, holding world's one-mile record of 39 seconds)—Time by miles, 1:17 4-5, 2:37, 3:57 1-5, 5:17 1-5; four and one-half miles, 5:56 1-5.



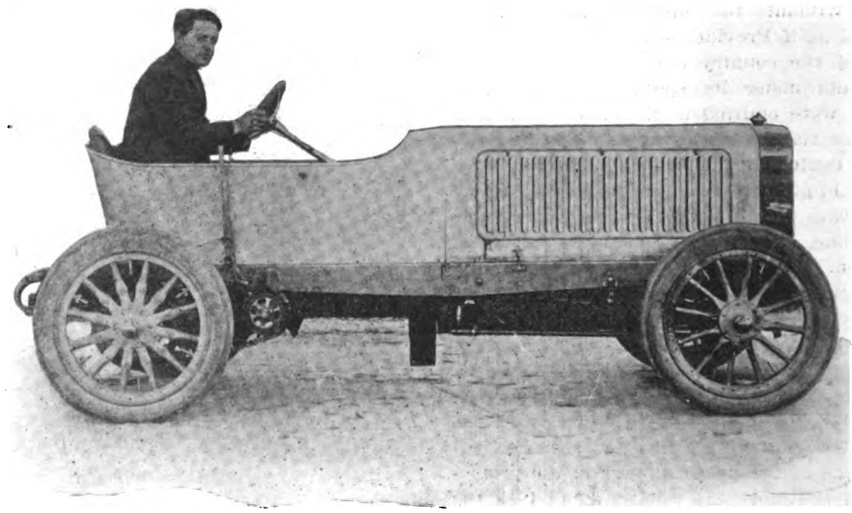
THE NEW SEABURY SPEEDWAY CAR.

Pope's New Racer Ready.

As an earnest of its announced intention to better the present world's straightaway mile recorf of 39 seconds, the Pope Motor Car Co. has completed what it claims to be the highest powered racing car ever built in this country. As can be seen from the accompanying illustration, the new six cylinder Pope-Toledo is well adapted for racing. Its makers hope that it will perform proportionately better than the 24 horsepower touring car which was in third place when the Vanderbilt Cup race was stopped.

The six cylinder engine develops something more than 90 horsepower. The cylinder dimensions are 6x6 inches. There is a direct drive and no transmission gear. The engine shaft is connected to the counter shaft by a bevel gear, and the rear wheels are driven by chains from the counter shaft. As geared at present, every time the engine completes a full revolution the driving wheels do likewise. The axles and steering knuckles are made of nickel steel. The radiator and bonnet are of the regular Pope-Toledo type. The car weighs less than 2,204 pounds, the limit for heavy racing machines.

The new racing machine will have its first public trial at the Ormond-Daytona Beach races in Florida next January. A. C. Webb, who drove the 60 horsepower Pope-Toledo racer in the Vanderbilt Cup race, will be the pilot of the new car.



A. C. WEBB IN THE NEW POPE-TOLEDO RACER.

Dead Heat Creates an Issue.

It will be recalled that in the Gaillon hill climbing contest for heavy cars Rigolly and Baras made a dead heat, each mounting the hill in 29 seconds, equal to seventy-seven miles an hour. Owing to this it was difficult to award the cup offered by the Figaro to the winner in the heavy car class, as Rigolly is the present holder. The question arose: Should he be left the possessor of it; or should the race be recontested?

The two contestants have both been interviewed on the subject. Baras says it is his opinion that he and Rigolly ought to start again, and that the present result cannot be allowed to stand. He is ready to run again if Rigolly will consent. Rigolly thinks he should remain in possession of the cup, since Baras has not in any way surpassed him. But if it is thought desirable, he is willing to renew the contest. What Rigolly proposes is that each competitor shall run again, making two trips over the course, and the best time of these two trips is alone to be counted. Baras has accepted these conditions, and the race will therefore take place again between the two competitors. The time will be taken by a timekeeper of the A. C. F. The date is not yet fixed.

Racing Man in New Role.

Fred J. Titus, once famous as a bicycle racing man, and who "trained" for the automobile trade at the Pope-Toledo factory, has engaged with H. S. Haupt, the Thomas agent in New York.

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SWITZERLAND'S WARM WELCOME

How the Touring Motorist's Life is Made Miserable by Petty Persecution.

In Switzerland the motorist's lot is not a happy one. He is badgered and bullied from the time he enters that land of liberty until he bids it an exultant farewell. An American, Dr. Wood McMurthy, has this to say of his experiences there:

"The only country I regret visiting with my automobile is Switzerland. I advise all automobilists to forego visiting that country until its authorities, and a certain part of its inhabitants learn at least a few of the rules of civilized communities. As matters stood when I visited Switzerland, an automobilist was regarded simply and solely as a felon and a legitimate subject from which to extort an arbitrary revenue. In some of the smaller villages the exchequer is filled by the monstrously unjust fines inflicted upon practically all automobilists passing through.

"Take my own case. As I entered the village of Horw I saw at the far end of a long street a gendarme surrounded by a number of villagers. Knowing the methods of the Swiss police, I slowed down to five or six kilometres an hour; but the fact that I was going slowly did not save me. I was called upon to halt, and informed that I was travelling at thirty-nine kilometres an hour, and that I must appear at the court, to be held several days later. While we were standing in the middle of the street two more machines came up, and, despite the fact that the guardian of the peace had not witnessed their arrival, he immediately went up to them and charged their owners with travelling at excessive speeds.

"We protested, but uselessly, and found it necessary to deposit 30 francs each with the Mayor before we were at liberty to proceed. We decided to await the trial, at great inconvenience to ourselves, and passed three disagreeable days in the village. The case was so glaringly in favor of all three of us that the 'juge' acquitted us, a result made known to me some weeks later. Our deposits were kept, however, and though I have written several times I can obtain no answer with respect to mine. Our arrest was only an incident in a huge, organized system of legalized highway robbery. At all the hotels I met automobilists with the same tale."

Saved from a Shock.

Automobiles have been put to many uses, but it remained for a clever Germantown electrician to put a machine to a use as novel as it was ingenious, though simple at that. The arc light at the northwest corner of Germantown and Chelten avenues suddenly went out Thursday night. Kicking the pole and a dozen other familiar methods failed to jar the carbons into proper position. Then the lamp was lowered, but all were afraid to touch it, as no one had rubber gloves or other means of insulation.

The chances of shock were increased by the wet pavement, and dripping lamp. Just then, as the darkness and delay became most vexatious at that much frequented corner, an automobile drove up and its owner got out and went into the postoffice. A happy thought struck the electrician, and he had a minute's hurried conversation with the owner. The electrician raised the lamp, while the automobilist drove the machine under it. Then the electrician stood on the automobile, safe with the protection of the insulation of the four rubber tires, and easily adjusted the carbons, and there was light again.

To Tinker New Jersey's Law.

Assemblyman Henry C. Scoville, of Camden, N. J., is already preparing to introduce amendments to the New Jersey automobile law, with the idea of making it still more stringent than it now is. He outlined the new features last week at the annual meeting of the Camden County Board of Agriculture, when he said:

"The roads in the country were primarily meant for the driver and people who used vehicles that were not dangerous. Automobiles have come to stay, but those who use them must be governed by some set of laws that will not make them a nuisance to the public. At the meeting of the next legislature I propose to introduce a few amendments which I think will be for the good of all concerned. First, for every violation of the automobile act, arrest without a warrant. Second, reduce the speed limit to whatever may be deemed proper. The speed limit of twenty miles an hour that is in force now is excessive. Third, that automobiles while in this State shall display only one number, the number of the State, on the back. Many of them have three or more numbers, and in the cloud of dust that is raised when they pass none of them can be easily distinguished."

Conflicts with State Law.

A speed limit of eight miles an hour is proposed for automobiles in Taunton, Mass., by the council committee on streets and bridges of that city. The ordinance provides that no self-propelled vehicle shall be allowed to go at a greater rate of speed than eight miles an hour within one and one-half miles of the City Hall. Local motorists are trying to have the rule changed to conform with the State law, which provides for ten miles an hour in cities and fifteen miles an hour in the country.

How Italy Regulates Speed.

The Italian commission charged with the drawing up of rules regarding automobile traffic in Italy has decreed that all automobiles must keep to the right, that a speed of nine miles an hour must not be exceeded in the cities, but that any speed may be attained in the country.

HACK DRIVERS RAISE ISSUE

Institute Action to Discover Whether Sightseeing Automobiles are Stages.

The question whether sightseeing automobiles are stages and so subject to the existing laws regarding such vehicles is now in a fair way to be settled by the courts.

It came up for argument on Monday before Justice Amend in the New York Supreme Court. The case was brought into the courts by the Hack Drivers' Union. One of the members of the union causing the arrest of James Tallon, an automobile operator, on September 9, and, to test the matter, Magistrate Moss held Tallon for trial in the Court of Special Sessions. Then Tallon's counsel, J. A. Hodge, got a writ of habeas corpus. The writ was made returnable on Monday before Justice Amend.

Counsel for the company owning the sightseeing automobile contended that there was no evidence that Tallon had violated any law, and that the sightseeing coach did not come within the law regulating the operation of stages carrying passengers, because it had no fixed route and did not take on and let off passengers en route. Charles Knox and J. T. Dooling, counsel for the Hack Drivers' Union, argued that the company ought to have obtained a franchise from the Mayor and Board of Aldermen. To get such a franchise, counsel said, the company must have obtained first the consent of the majority of the property owners along the line of streets used, and that of any railroad company occupying a street where the automobile coaches were operated for more than a thousand feet.

Assistant District Attorney Johnstone appeared for The People, supporting the charge against Tallon. Justice Amend reserved decision. The case will be carried to the higher courts.

It may have no connection with the matter, but it is interesting to note that the name of "Florrie" Sullivan, who is popularly credited with having a controlling influence with the Board of Aldermen, appears among the incorporators of a sightseeing company this week.

Indignant Jerseymen Start Stage Line.

An automobile stage line is to be established between Trenton, N. J., and Yardville, a nearby town, by indignant residents of the latter place. Up to recently the Trenton Street Railway Co. ran cars to Yardville every half hour, but are now running them an hour apart. The firm to operate the line will be known as the Automobile Transportation Co. The machines will run every half hour, and the fare will be 10 cents, the same as is charged by the railway company. The machines will be inclosed, and will carry thirty passengers.

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SPARKING PLUG ATTRIBUTES

Insulation and Durability are Opposing Qualities —Choice of Materials Not Easy.

Sparking plug construction and design necessarily embody a compromise. The most important attribute of a plug is insulation. Yet if it were possible to consider insulation alone sparking plug manufacture would be revolutionized in a day. As concessions have to be made to durability, however, such materials as porcelain and mica are made use of.

"Theoretically the ideal material is glass. It possesses almost perfect insulating properties, and to them it owes its popularity with the telegraph companies, who use glass insulators for nearly all outside work. But glass is of such a perishable nature that it is utterly unsuited for sparking plugs. Not only would it break if struck by any hard substance, but a drop of hot water or other liquid falling on it would crack it quicker than you could say 'Jack Robinson.' It is even probable that jarring over rough roads would shatter it," said a New York tradesman in the course of a conversation with a Motor World man.

"Now, porcelain comes next to glass in the matter of insulating properties, and it possesses the advantage of being somewhat tougher. To these facts it owes its popularity as a material for sparking plugs. There is porcelain and porcelain, and the best of it is none too good, while the worst of it is mighty poor stuff. Imported porcelain is principally used, for the reason that it is better. I suppose this is due to the fact that the ceramic art is so much older over there, being a growth of centuries, while here it has flourished only a few years.

"Porcelain is a good insulator, but it will crack and break on the slightest provocation—and sometimes without any. That is where mica gets its chance. It is inferior as an insulating material to porcelain, but it is much more durable. A mica plug is made up of hundreds of little pieces of mica, which are put in a hydraulic press and forced into such intimate relation that they become like a solid piece. They can't break. The only danger to be apprehended is that a separation of the layers will take place—a separation not detectable by the eye, even through a powerful glass—and thus permit the electricity to leak. The same thing happens if a porcelain plug becomes porous, either in large or small degree. The leakage thus set up may be small, but it decreases the 'fatness' of the spark and results in a slowly or imperfectly ignited charge, with a consequent reduction in the force of the explosion.

"When this occurs you wonder what is wrong. There is a loss of power somewhere, but you may search a long time before tracing it to the sparking plug."

Odd Outcome of Dealer's Suit.

A peculiar predicament is that confronting Colonel John M. Foster, of this city, as a result of a court order issued last week. He is required to return an automobile that is no longer in his possession, having been sold by him some time ago.

It appears that a jury in the Circuit Court, Newark, N. J., before Judge Adams, rendered a verdict directing Colonel Foster to return to George M. Condon, of No. 283 Halsey street, an automobile, which the former secured through replevin proceedings from Condon, and against which Condon had a bill for repairs amounting to $359.

Condon sold the car in question some time ago to Colonel Foster, and it is alleged that the latter's son, Howard C., met with several accidents while operating it which necessitated its being returned to Condon for repairs. When the bill for the work was presented to Howard Foster it is claimed that he asked Condon to split it into small instalments. Condon, however, refused, as the work had been done. The elder Foster, it is said, disputed the bill for repairs, and when Condon would not surrender the machine without his money, he replevined it.

De Dion at Last Comes Over.

De Dion-Bouton, Ltd., have at last come 'round to the sliding gear type of transmission. The time honored gear box with the famous expanding clutches will in future only be fitted to the 6 horsepower cars, these cars having a gear clutch box similar to that hitherto built into the 8 horsepower car, with three speeds forward and a reverse. The 8 horsepower, like the higher powered cars, will be fitted with change speed gear of the "baladeur," or modified Panhard, type, and a novel clutch system, consisting of metal-to-metal disks held in driving contact by spiral springs. The 1905 line will comprise the 8 horsepower single cylinder car, the 10 horsepower and 12 horsepower two cylinder cars, and the 15 horsepower four cylinder car.

Serpollet's New Steamer.

It is reported that the Gardner-Serpollet Company are bringing out for the 1905 season a new type of light steam car, in which the engine will be located under the bonnet in the front of the frame, and in which, in place of a condenser, a radiator with fan will be employed. Improvements have also been effected in the burner by which the consumption of gasolene will be greatly reduced.

Wagon Works "Trying Out" Automobiles.

The Harrison Wagon Works, a large Grand Rapids, Mich., concern, is at work on two experimental automobiles. Should these prove successful, the concern will begin the manufacture of cars on an extensive scale.

The Michigan Motor & Mfg. Co., of Detroit, Mich., has purchased the plant of the Rough Wagon Co., at Buchanan, Mich., and will remove there at once.

PREMIUM ON COMFORT

French Effort to Stimulate Body Design—Contest that is Being Arranged.

One factor in the success of the automobile —i. e., the design of the body—is becoming a recognized feature of the French exhibitions and competitions of the times. In the Paris Salon, the car which is considered to be the most comfortable wins a special prize, and this year a series of competitions is being organized especially for automobile bodies. Lately at Chateau-Thierry spectators looked on, not only at a race, but also at a rivalry of comfort and elegance in regard to the vehicles taking part. In January next there will be a competition for automobile carriage bodies, the rules for which are not yet fixed; but the vehicles are to be divided into classes according to their prices. These classes will be very similar to those of the tourist car competitions. This information is causing some excitement and stir among the body makers, more especially as report says that the jury is to be composed of specialists chosen not only for their knowledge of automobiles, but also for their well known good taste and judgment in matters of elegance.

The famous Vedrine, interviewed on this subject, says the idea is very interesting, and that he would certainly give the jury a chance of deciding on several automobile bodies of his manufacture. He thinks that automobile bodies have been too long neglected, especially considering that they are one of the most important parts of the car, and he is only surprised that similar competitions have not been held long ago. But better late than never, and it is to be hoped that the body makers will rise to the occasion. Messrs. Botiaux, Rothschild, etc., are equally enthusiastic, so there can be no doubt that the entries for this competition will be sufficiently numerous to encourage the organizers.

Substitute for a Shaft Pin.

A substitute for a split-pin may be improvised from an ordinary nail with a large head, one side of the latter being filed off if necessary to permit of the nail lodging close enough to the nut which it is intended to retain in position. The nail, when passed through the hole in the shaft, should be bent with a hammer so that it cannot slip out. A better split-pin may be made by means of a piece of iron wire, which should be bent round a nail by means of ordinary strong pliers until the part surrounding the nail forms as nearly a circle as is possible. The extended parts of the wire are then bent into the proper split-pin form by means of the pliers, but it is necessary to take care that the wire selected when doubled as a split-pin will fill comfortably the hole in the shaft into which it is to be placed.

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BENNETT CUP CONDITIONS

Limit for Entries is Extended, but Safeguards are Thrown Around It.

Two changes have been made by the racing committee of the Automobile Club of America in the conditions governing the receipt of entries for the Bennett Cup race. They are as follows:

Extending the date at which entrants' cars must be placed at the disposal of the committee (which was previously fixed for April 15) to May 1, 1905.

That each entrant must file with the club secretary on or before May 1, 1905, an affidavit that his car has been entirely completed for a period of over two weeks.

The date of closing of entries in the United States remains the same, viz., December 15, 1904.

The foregoing changes do not otherwise affect the conditions laid down last August by the Automobile Club of America for the conduct of the cup race trials. They were formulated after the farcical trials of last spring, with the special purpose of preventing a repetition of such a fiasco.

These conditions require that each car presented for competition shall have been completed for a period of over four weeks; that it has been run at least 1,000 miles on the road, at least 250 miles without stopping engine, and at least forty miles within the hour on road or track.

An entrance fee of $600 is required, which is to be refunded to any entrant complying with the club's rules who is not nominated as a member of the team. A nominated entrant who does not start in the race forfeits the entrance fee, and entrants who do start are to be remitted a portion of the fee after the expenses incurred in holding the race are paid. It is also provided that any entrant who does not present his car for the trials, or who refuses to undergo the tests or abide by the rules, shall be ineligible to enter the race for that year, and may forfeit his entrance fee.

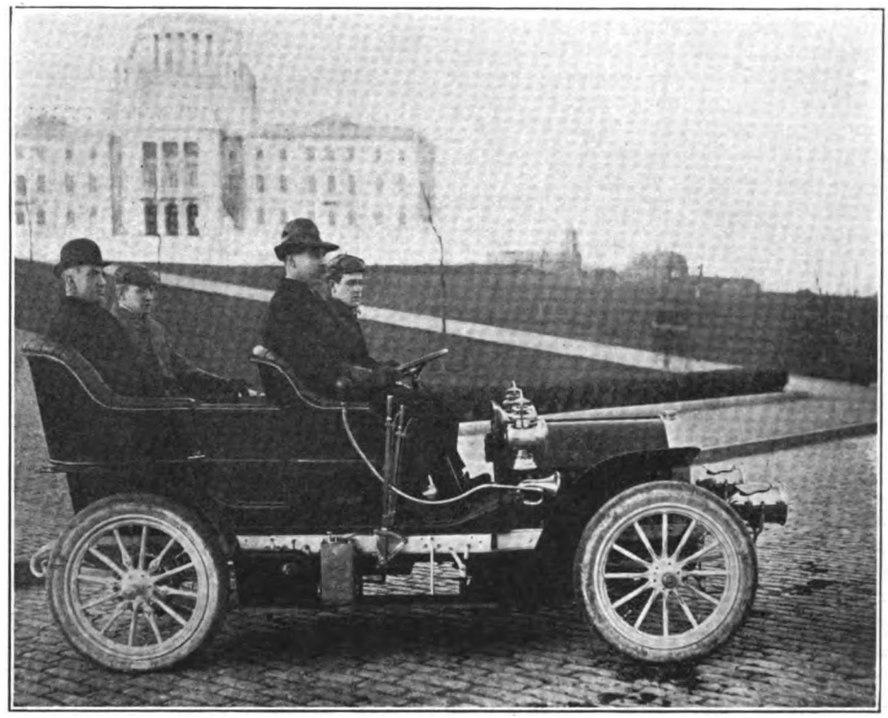
Shot Cattle to Save Life.

Meeting a herd of eight hundred cattle in a narrow pass road near Gaviota, Cal., Gilbert E. Bailey and his wife, of San Francisco, had a narrow escape from death. The automobile was at one of the narrowest parts of the road when the cattle were encountered, and the first part of the herd passed the machine in safety. The main body of the herd became frightened and tried to pass too quickly, and the machine was in great danger of being pushed over the edge of the road. Bailey shot some of the cattle with a heavy revolver, and in that manner saved his own life and that of his wife. The machine was badly wrecked.

How Davis Climbed the Hill.

When Colonel Nelson S. Davis, the Locomobile agent in Providence, R. I., received his first 1905-15-20 Locomobile, he promptly put it to that test which proves to Providence folk the "mettle" of each particular car—that is, he sent it up College Hill, that Rhode Island eminence which has brought either joy or sorrow to many an automobile owner.

The picture shows Mr. Davis in front of the Capitol at Providence after he had cantered up the steep grade on the high gear with the four passengers shown. Davis himself is at the wheel. Beside him is Murray Paige, of the Locomobile Co. Directly behind him is Fred Smith, a well known automobilist of Providence. M. V. Doud, of the Locomobile Co., was the other occupant of the tonneau.



DAVIS ON TOP OF COLLEGE HILL.

Chauffeurs Are Officially Teamsters.

It has been officially decided by the general officers of the International Brotherhood of Teamsters that an automobile driver is a teamster. The local organizers of the brotherhood had been considering the question of forming the automobile drivers into unions, but were in doubt whether an automobile driver could be classed as a teamster. The case was referred to the general officers, who directed the New York men to organize the automobile drivers. The automobile drivers are still to be heard from.

Held the Lucky Number.

It was a fortunate investment for Mrs. Mamie E. Mealie, of No. 223 West Thirteenth street, New York, when she paid $1 for ticket No. 816 at the Harvest Festival, in aid of the Free Industrial School for Crippled Children, at the Waldorf-Astoria, this city, last week. That number won the electric automobile that was offered as a prize.

WON'T IMPOSE PENALTY

Tourist Who got into Trouble with Customs Officials Finds Relief.

The law governing the importation of automobiles in bond for touring purposes was defined on Monday in a letter from Assistant Secretary of the Treasury Robert B. Armstrong to Collector Stranahan of the Port of New York.

The letter was called for by a complaint from Col. J. B. Wilkinson, jr., counsel for H. T. Kearney, a Californian, resident abroad, against the assessment of a penalty for alleged undervaluation of a Mercedes car he imported on November 10 for a tour of this country. Kearney entered the car at $7,000, and gave a bond of $10,000 to guarantee its exportation within three months. The appraiser, however, put the value at $8,425, and held the car for the collection of a penalty of $2,000 for the alleged undervaluation. This advance in value was sustained by General Appraiser Fischer. Then Colonel Wilkinson explained to the department that Kearney had entered the car at the price he paid for it, thinking that this was the correct proceeding.

Assistant Secretary Armstrong now orders Collector Stranahan to release the machine, explaining that it was not the intention of the department to assess penalties on automobiles imported in good faith for touring purposes.

Champaign, Ill., has hopes of shortly having an automobile factory "in its midst." No names are given in connection with the project, however.

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"Racing" and Clutching Abuses.

A particularly aggravating form of abuse of a car is the needless "racing" of the motor. The experienced driver does not, as a rule, throw the throttle wide open and let the motor try to fly out of the car while he puts on his gloves or attends to some other little errand before starting. On the contrary, he takes a pride in making each turn of the motor carry him as far as possible, to the saving of fuel, noise, vibration and odor, and at all times aims to keep the motor running at the lowest practical rate of speed.

Coupled with the racing motor is the sudden clutching abuse practised by the novice. With the motor running at high speed a sudden application of the clutch will cause the vehicle to jump forward or backward, as the case may be, straining all parts of the driving gear, and moving the car so quickly that persons to the front or rear are more or less in danger. Possibly such abuse is frequently due to the inexperience or ignorance of the proper way, and it seems more charitable to assume this. The experienced driver takes a pride in moving away without a jar or jerk, and this is as true in driving a motor car as in handling a locomotive.

Winter Care of Tires.

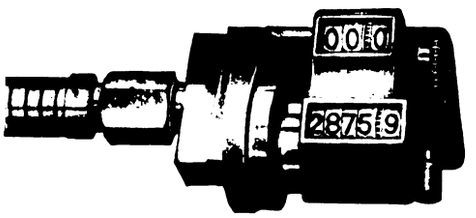
As a rule, toward the end of the season motorists are less particular about the condition of the tires on their cars and less anxious as to sending them to be repaired directly they show any signs of wear. In fact, many delay sending them to the manufacturers until they cannot run any longer. Others take off the tires, wrap them up carefully and put them away according to all the rules for good preservation laid down by makers. And when the fine weather returns and they wish to "motor" again, they are surprised to find that the tires cannot be used until they have undergone some repairs; and consequently they have either to wait until these repairs are executed or buy new tires. It is much more simple, in order to prevent this contingency, to send all faulty tires to the repairers at once. The repairs will be done much quicker now than in the spring, when motor tire repairers will be overwhelmed with orders, and besides, the tires will be preserved just as well during the bad season after they have been repaired.

To Clean Plugs Without Removing Them.

With a multiple cylinder motor, it is easy to clear a sooty ignition plug without removing it from the cylinder, if the following plan is followed. Detach the high tension wire from the misbehaving plug, open the compression tap of its cylinder, and run the engine on the other cylinders. Then hold the terminal of the detached wire, being very careful not to touch the metal part with the fingers, a very short distance off the end of the plug, so that the spark jumps to the latter. At first the cylinder will be heard to be missing, but very quickly the reverse will be the case, and the dirty plug will be found to have cleared itself. Then switch off, shut your compression tap, attach your wire again, start up, and continue on your way rejoicing.

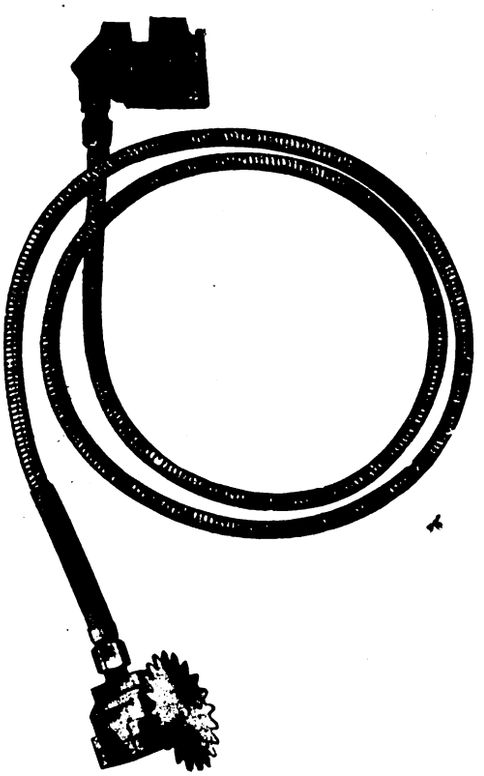
Veeder's Newest Odometer.

It was to have been expected that, the demand having arisen for a dashboard odometer, the Veeder Mfg. Co., Hartford, Conn., would be not only quick to meet it, but meet it with an article worthy of their reputation and experience as pioneers. This they have done, as the accompanying illustrations of the Veeder Form D, as the odometer is styled.



VEEDER D1 ODOMETER WITH STRAIGHT DRIVE.

shows. As is apparent, the odometer has two registers, the upper being a trip register, which may be set at zero at will, while the lower keeps a record of the total number of miles travelled.



VEEDER D2 ODOMETER WITH BEVEL DRIVE.

Both registers indicate in tenths, the right hand figure on each being in red. The figures themselves are of good readable size, and, instead of being distributed over a large area and widely separated, are compactly arranged, all the gearing of the odometer proper being contained inside the number rings themselves.

The instrument is operated by gears and flexible shaft, the latter being protected by a metallic, flexible sheathing. By using small drive gears and large pinions, a high speed of revolution for the flexible shaft is avoided.

Two styles of the Veeder Form D odometer are supplied—the straight drive and the bevel drive, which are known as the Form D1 and Form D2, respectively. In the first the flexible shaft is introduced horizontally directly into the side of the odometer; in the second the shaft may be brought up straight from the floor of the car or through the dash directly back of the instrument, bevel gears conveying the movement to the odometer.

All parts of the complete odometer are finished in polished nickel, unless otherwise specified, and though the Veeder people say they can supply the instruments finished in brass, they do so against their judgment, as the very best brass plating is apt to wear away in spots and will not stand the use of polishing preparations. Special attaching fixtures are provided for each of the standard makes of car. The price, complete with fixtures, is $25.

To Solder a Broken Tube.

To solder a broken tube or other break one must have a soldering lamp, or soldering iron, some chloride of zinc (which may be obtained by pouring some spirit of salts over zinc clippings), some tin solder, and a piece of sal ammoniac to clean the iron.

With these in hand proceed as follows: (1) Heat the iron, on a wood charcoal fire preferably; (2) scrape it while hot with an old file; (3) pass it on the sal ammoniac with a little solder (the point of the iron will be seen shining with the melted tin which remains adhering to it); (4) clean the surfaces to be soldered with the chloride of zinc, which may be done with a small brush or a piece of pointed wood; (5) spread some solder with the hot iron on the surfaces thus cleaned—they will be thus covered with tin, and one can easily make them adhere with the hot iron and a little solder melted by the hot iron on the parts to be joined. If chloride of zinc is not handy the cleaning may be done by a file or scraper, and a lamp or candle will serve to replace the cleaning of the chloride of zinc.

Soldering with a lamp is done with the same materials, but greater dexterity is necessary than is required by use of the iron. If you wish to repair with ease broken tube or leaking tank go spend an hour or two in the shop of a tinsmith, and with what is written above you will leave master of the soldering process.

When the Magneto Loses Power.

When the magneto ignition is failing in its magnetic powers it will be found that the engine loses power, as the ignition is not complete, as before. Consequently combustion is less rapid, and is followed by a loss of power. When this occurs it is only necessary to remove the horseshoe magnets from the machine, and to have them remagnetized by being placed against the fields of a dynamo which is working at its full power. By this the permanent magnets will be remagnetized, and the machine will then develop its full ignition power, and continue to work for a further lengthened period before further remagnitising is required.

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STARTING THE MOTOR

How to Avoid Broken Arms and Bruised Faces —Knack, Not Strength, Required.

Like everything else in the world, there is a right way and a wrong way to do even so simple a thing as to crank an automobile.

When everything is all right it does not matter how a car is cranked, but the best of operators at times will leave the spark advanced slightly, or it is possible in some cars that the mechanism may become uncoupled and advance it automatically, or that it may get out of adjustment and advance the spark without the operator noticing it.

With this in view, it is much better to form the habit of cranking a machine in such a way that injury is not possible, no matter if for any reason the spark is left advanced.

You may start the machine ninety-nine times out of a hundred with everything all right, and begin to think that nothing can happen, but the hundredth time a wrist is broken or a few front teeth are knocked out by coming in contact with the radiator on the front end of the hood of the machine. Once is enough, and it is much better to avoid even the once.

One of the accompanying photographs illustrates the right way,and the other one of the wrong ways—for there are several ways that are wrong.

Referring particularly to the position of the hand and the body as a whole: In the right way, with the machine cranking the way of the clock, it is easy to form the habit of grasping the crank with the left hand and taking hold mostly with the fingers, and not with the palm. As the compression begins to be felt on the upper quarter, the back should be straight and the arm straight, or nearly so, and the remainder of the compression overcome by a quick throw of the shoulder and the body, perhaps assisting a little bit with the arm.

Should, for any reason, a premature explosion take place, the fingers will be whipped open, the crank fly around and find nothing to hit. The back being straight, there is no possibility that it will pull the body down and strike the head or face on the front end of the machine before the fingers will give. It has been tried many times with the spark advanced, and in every case the fingers open so easily and quickly that no harm has been done.

Referring to the other picture—the wrong way: Seizing the crank by the right hand, necessarily stooping over more or less in order to do it, and with the knuckles underneath the handle. The back is bent, the face is nearer the front end of the car, so that when the premature explosion comes, if it does come, the crank cannot open the fingers at all; certainly not quick enough to save the face from being bruised, or, if that escapes, from the crank coming around and hitting the arm, which is just in position to catch the return blow.

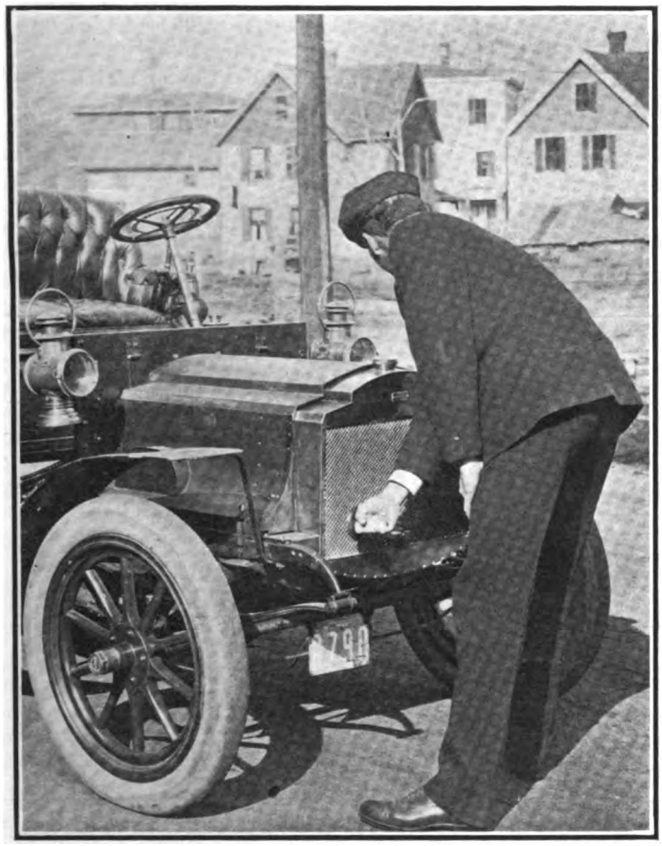
It may be, and quite likely is, awkward for a right handed man to do this the first time, but after once acquiring the habit (and it should be made a habit) few will depart from it again.

It is extremely easy to walk up to the machine, grasp the handle with the left hand, push the hub of the crank into connection with the shaft of the engine, simultaneously straighten the back, feel the first part of the compression, and then jerk the crank over the centre, giving the first explosion.

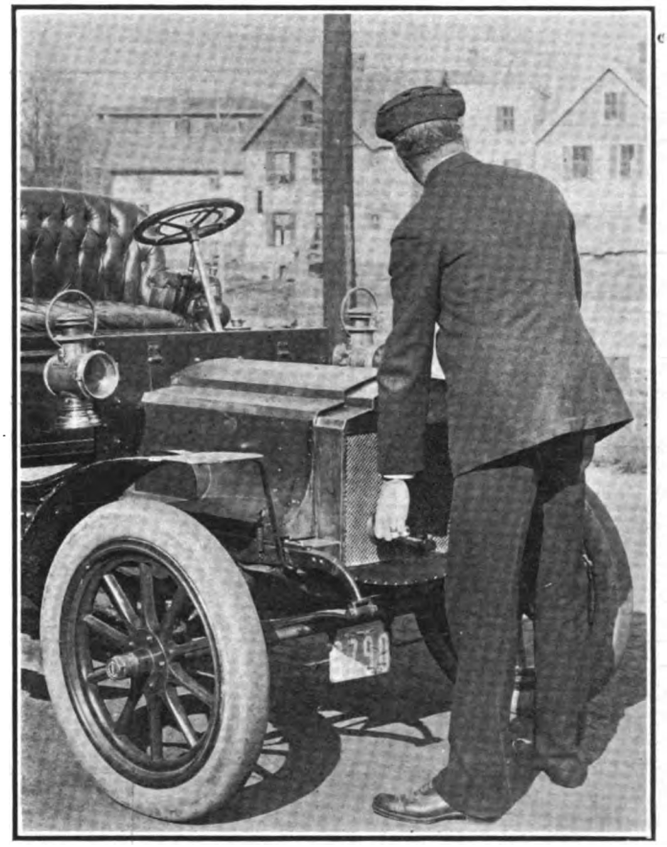
Inexperienced operators and ones not in touch with many others may think this taking unnecessary precautions; but it is a fact that not a few, but many, accidents have happened this last year by improper position while cranking automobiles. It is much better to learn by experience of others and take these seemingly unnecessary precautions than learn by sad personal experience.

Until machines are built to crank the opposite way of the clock it is difficult to see how the right hand can be used with perfect safety. As the photographs show, any one grasping the crank with the right hand and fingers under it, and even the palm under it, cannot get it out of the way of the rotating crank as quickly as in the other position shown. The crank exerts its force in a direction practically perpendicular to the bones of the hand, and it strikes so quickly that there is no possible chance of letting go before the harm is done.

On the other hand, with the knuckles and hand on the outside of the handle, when the



THE WRONG WAY.



THE RIGHT WAY.

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crank strikes, the line of force is practically in a line with the bones of the hand and simply opens the fingers without doing anything else.

Some of the cars are very high in front, the top of the radiator, when grasping the crank with the right hand, being very near the face and head. It does not take much of a yank to bring the face violently in contact with the machine. There are not a few men who now possess "store teeth" as the result of just such accidents, while the number of arms that have been carried in splints or slings because of the "back kick" is far more numerous.

How to Start the Car.

There is a right as well as a wrong way of starting a gasolene car. Who has not watched or experienced the wrong way and wondered why a driver with any pretensions to skill should follow it? The engine is started and the occupants of the car brace themselves for the shock that they know is coming. The clutch is thrown in and the car plunges forward abruptly; it almost seems as if the sudden and tremendous application of power had lifted it off the ground. The passengers are forced back into their seats and then brought forward as the car picks up its speed. The process is a good imitation of that of a trolley car in a congested street when the motorman plays with the power, alternately applying and shutting it off, tilting the passengers back and forth as if they were manikins.

A driver who really knows his business never starts in this way, any more than does a locomotive engineer. He introduces his clutch gradually, permitting only part of the power to be transmitted at first, thus starting the car gradually and without the suspicion of a jerk. It gathers way, slowly at first, but before many yards have been traversed the clutch is forced home and the full power of the engine is being transmitted to the gearing.

The saving in wear and tear of engine, gears, frame, springs, wheels and tires by this method of starting is enormous.

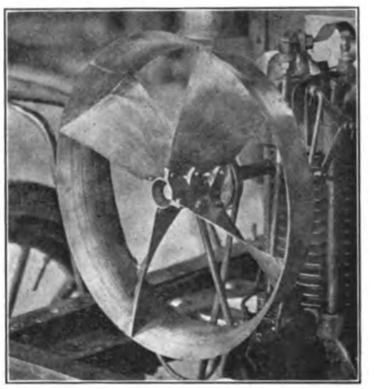
Injected Water in His Tires.

It is often taken for granted that pneumatic tires are unsuitable for the roads of India and its climate alike. A motorist who has had much experience in that country combats this theory, however. He says that, as a matter of fact, there was no reason whatever why cars going to India should be specially fitted with solid tires. He himself, indeed, had never had a single puncture while driving in India.. So far as concerned heat, he found that this had no deleterious effect on tire covers, but for the better preservation of inner tubes he had discovered that a plan which answered admirably was to inject about a pint of water through the valve of each tire.. The expedient sounds novel, but, after all, "the proof of the pudding is in the eating."

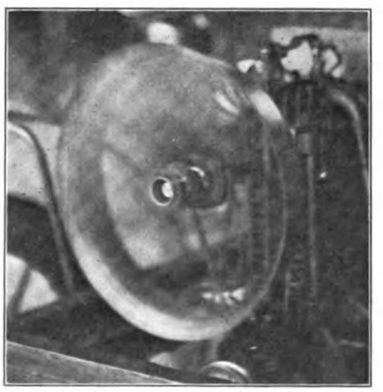
TO SERVE TWO PURPOSES

Fan That Not Only Cools the Motor, but is Claimed to Quicken Speed.

Not alone as a cooling apparatus, but as an aid in propulsion is the aeropinion, made by the Aeropinion Concern, 1367 Broadway, Brooklyn, now put forth. The device as applied to a car, termed the Aerocar, and to a vehicle on runners for travelling on the ice, was described in the Motor World last winter, and its makers are now preparing to



push it in its new form as a cooling fan which can be applied to either air or water-cooled cars. So used, it is claimed to not only do the work of cooling much more effectually than any other type of fan, but as well to answer the purpose of an auxiliary in the work of propelling the car. Experiments conducted with the fan are said to have been of a highly satisfactory character.



At present the Aeropinion company is confining its efforts to pushing the sale of the fan as a cooling device. A practical illustration of its working is being given at the present time. A Cameron car has been fitted up with an aeropinion, the fan used to cool it having been removed to make room for the former. Experiments with the car standing still were made with first one fan and then the other. With the regular fan the engine cylinder became almost red hot, and it was impossible to bear the hand near it; but when the aeropinion was substituted an instantaneous improvement is claimed to have been made. No signs of excessive heating appeared, and the hand could be brought close enough to almost touch the engine. It is also claimed that a marked increase in speed and power was observable after the aeropinion had been fitted.

It is to the peculiar design of its blades and hub that the aeropinion owes its remarkable advantages. It affords the fullest and most positive resistance obtainable from the column of air with which, when in opertion, it comes in contact, scrupulously delivering the full and unimpaired measure of power transmitted to it. When revolving at a working velocity it literally devours its passage through the air, the enlarged peak allowing a broad core of air to be continuously drawn in by the screw, rotary and forward movements, which is compressed through the waistband and forced against the points of greatest leverage on the blades. Exactly the same volume of air emerges from the rear that entered at the front. By varying the flare of the peak and the taper of the hub case, the discharge current may be concentrated to any compass or direction for such purposes as cooling motors. The manner of construction renders it practically indestructible by speeding. Every part is securely bound together at both hub and periphery, and all are protected by the bonnet.

Used as a fan, the aeropinion sweeps the heat from cylinder or radiator. It advances the vehicle while removing the heat, is stronger and will stand more r. p. m. and discharge more cubic feet of compressed air at each revolution, or, in any given time, than any other kind f detached fan.

The velocity of the blast when delivered upon the cylinder head is increased at the moment of escape by expansion and absorption of heat, greatly accelerating its force and cooling capacity.

Comparing this current with that of fans now in use, it is a cyclone to a strong wind. Applied to motors of competent radiating surface, with bonnets so constructed that free exit is provided for the heated air, its function is perfectly performed.

As stated, it is the intention of the concern at present to push the aeropinion as a cooling fan. With that object it seeks to interest makers of either air or water cooled cars, and stands ready to prove its contentions regarding the merits of the apparatus. A little later it will push the Aerocar, which is simply a car in which a much larger fan, power driven, is used to drive the vehicle, on land or ice, directly by the impact of the air from the fan.

Home-Made Fire Extinguisher.

On the theory that an ounce of prevention is worth a pound of cure, this tip is of some value:

It is a good idea to hang a bottle containing about a gallon of ammonia from the top of the tank or room containing the gasolene by a string or fusible link, so that if the gasolene takes fire the bottle will fall and be broken, releasing the ammonia and promptly putting out the burning gasolene.

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EFFORTS TO DOWN THE DUST

Experiments to That End That Were Made and How they Panned Out.

One of the best features of the oil method of treating roads is the surprisingly enduring character of the work. No data is yet available shedding light on the exact length of time a covering of petroleum products will last, but experiments have gone sufficiently far to indicate that the term of usefulness will reach a year and perhaps longer. There is reason to believe, too, that the renewing process will be much easier and less costly than the initial application, although this, as well as the duration of the latter, is dependant to a considerable extent on the hardness of the road. One having a surface of stone will, of course, absorb less oil and retain it longer than one wholly or partly composed of loam or other natural soil. California oil treated roads are said to show splendid wearing qualities, while the Long Island sample, on the Vanderbilt cup course, is, to all appearances, in the same condition to-day as it was on the day of the race.

These conclusions are also borne out by experiments conducted on some roads in Scotland. Westrumite was made use of, half a ton being applied to a half-mile stretch on each road.

Previous to the first application the road was thoroughly cleaned and swept, and a 10 per cent solution applied by means of ordinary watering carts. Three days thereafter another 10 per cent solution was applied, but within a very few hours of this second application torrential rain fell over the district, which washed away a considerable portion of the mixture. Consequently, a third 10 per cent mixture was applied instead of, as was originally intended, two successive application of 5 per cent.

Crude oil was applied over a stretch of road comprising metalling at two stages of wear. In these cases the road surface was swept clean, and the oil poured on by means of cans, and brushed over so as to saturate the surface uniformly. In about twelve hours thereafter the road surface was dry enough to take the traffic, and not a single complaint of damage done to the paint of any vehicle thereby has been made. These experiments, comprising nearly one and a half miles of roads of fair average width, cost about $100 per mile, which is considerably less than was expended on the Long Island roads. The various applications took place between May 31 and June 23 last.

In the case of westrumite, for a very considerable time after the application there was absolutely no dust raised by vehicles of any description passing over the road, and three months after the application there was none to speak of, while the fact of the application having taken place over metalling of various stages of wear has demonstrated that on the older portions the tendency to dust is greater, as it is there that it has begun to show most.

On one road the surface became glazed and somewhat slippery, and some complaints were made regarding this. On the other road there was not the slightest tendency to this whatever. It is believed that the hard metal used on the latter is more suitable than that used on the former. It is also observed that specially good results were got on newly metalled surface where the material taken from the old surface was used for blinding, and that this observation is applicable to the results from both of the oils experimented with.

In the case of the crude oil the results obtained from the different stages of wear of road surface are not so noticeable. This material is most effective, but for the first week or ten days after its application, especially if wet weather prevails, it is not so clean as the westrumite; neither is it so easily applied, nor so clean to handle. There is one point in its favor, viz., that one application suffices for a season. With the westrumite several applications are necessary, at intervals varying according to the nature of the weather and the condition of the road.

The experiments have been so far successful, and have demonstrated the efficiency of the materials used for the purposes of dust prevention.

The Innkeeper and the Inquisitive.

They are a pretty curious set of people down Rhode Island way, as the following makes plain. Incidentally, the incident sheds light on one more disadvantage of the numbering system:

The proprietor of a popular roadhouse in Warwick, near Providence, has been greatly annoyed by the idle curiosity displayed by some automobilists as to the identity of others who patronize his place.

It is quite natural for a man who, being out for a turn in the evening with his wife, drops into the resort in question for a cooling drink or a little luncheon, to prefer to remain incognito. If some one's else wife accompanies him, it is more than natural that he should want to keep his identity to himself. But when the automobiles run under a shed, from which the registery numbers shine forth for all to see, like a good deal in a naughty world, it is the easiest thing in the world for some other party to drive up, look over the numbers and when out on the road pull out a registry book, find out the names of the persons who owned the machines and cause them a good deal of discomfort over the telephone the following day:

This, according to the roadhouse keeper, has been a favorite pastime ever since he took hold of the place, and he gave a good deal of thought to meeting the difficulties. Finally he evolved a scheme. Nowadays, when inquisitive people seek to learn, by looking at registry numbers, who is in the hotel, they find the number plates covered with a bag, which effectually thwarts their sinister designs.

SPEED CARS MINIMIZED

How the Touring Car is "Coming Into Its Own" and to Good Purpose.

One of the most encouraging signs of the times is the growing interest being taken in the touring car, says the Motor Review, Paris. Any attempt, even so recently as a year ago, to organize meetings devoted solely to touring vehicles would have run a very good chance of proving a failure. In hill climbing and speed tests the performances of the ordinary cars were regarded as an introduction to the more exciting part of the programme, when the high powered machines, with their skeleton frames and huge motors, suggested just enough peril to keep the nerves of the spectators at high tension. Touring car events were too amateurish to be taken at all seriously. The public are now showing a more rational interest in motor car trials, and if the sporting instinct is still uppermost, a growing acquaintance with the automobile has awakened in them a desire to keep in touch with its technical progress. It is this which explains the success of the recent hill climbing trials at Chateau-Thierry, when the vehicles competing had to be of the ordinary commercial touring type, certified by the makers as belonging to their standard patterns, and as selling at the prices marked on the programme. Close on seventy vehicles were presented on that occasion, and they offered an excellent opportunity of comparing and judging of the improvements that are being made in the French touring car.

As a special competition had been arranged in connection with these trials, when prizes were offered for the best carriage bodies, it might have been expected that makers would have presented some interesting novelties. It must be confessed, however, that much less has been done in the way of creating new patterns than might have been supposed. It is true that there were some highly luxurious limousines on the Radia, Berliet and Aries chassis, and that the carriage work was of an excellent quality on most of the vehicles. But what is wanted is a greater variety of patterns for ordinary cars. The purchaser of a high priced car can go to any big carriage builder, who makes a specialty of automobile bodies, and select designs that meet all his requirements as regards, elegance, comfort and finish. These bodies are fitted up with every possible convenience, and make motoring a pleasure in sunshine or rain, in dust or mud. The owner of such a car has no need to dress himself like an Esquimau in winter or carry about with him a full wardrobe in summer. The buyer of a much lower priced car cannot, of course, expect to get the same luxuries, but he ought at least to procure bodies that will offer him the same protection.

Among the cheaper cars assembled at Chateau-Thierry there was a singular absence of originality in carriage design.

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With the exception of a few double phaetons, they were all of the tonneau type, generally with front entrance by a swivel seat. The limousine, which seemed likely at one time to supplant the tonneau, is usually reserved for the more expensive cars. The difficulty lies in the fact that as soon as an attempt is made to design and build bodies for moderate priced chassis offering adequate protection to the passengers, the purchase price is considerably enhanced. The problem of providing a cheap and practical form of body is becoming increasingly important now that motoring is almost as active in winter as it is in summer, in the sense that owners employ their cars for general use all through the year. Winter driving has entirely lost its drawbacks with the introduction of non-skidding bands and other devices that contribute to the safety and comfort of the motorist. A satisfactory feature of the touring car is the improvement observable in its general appearance. Owners no longer care to distinguish themselves by driving about in chromatic vehicles, which, however dazzling they may look in their display of red, yellow or green, have an appearance of being a little too aggressive. These colors have happily been toned down, and we were particularly struck by the neatness of the De Dietrich, with its bonnet painted and veined in a yellowish brown color like the body, suggesting the natural wood. These are little matters, but they help toward an improvement in the general appearance of the car.

It is in the light and cheap class of vehicles that improvement is most needed. These little cars have less chance of making the same progress as the bigger carriages, because they do not receive anything like the same attention, it being an almost general rule that as soon as a new firm have taken their stand in the industry as manufacturers of small cars they drift insensibly into the construction of large vehicles. The small motor car is too often regarded as merely a stepping stone to the more expensive carriages. This is a great mistake, and is responsible for many of the shortcomings in the automobile industry. The maker goes in for big cars because he finds that the only means of successfully doing a business in small vehicles is to reduce the cost of manufacture by a heavy production, and as the small car is a specialized branch, needing considerable capital, there are very few firms in a position to follow it up. Thus the small car continues with very little change in its general lines. It is almost always constructed to one pattern, and there is really nothing to show that it is the best, while there is often an excessive lightness about the steering gear, brakes and other parts that does not favorably impress buyers on the lookout for vehicles capable of doing hard work. The problem of the small car must be seriously tackled in the early future if the automobile industry is to settle down on a solid and profitable basis.

In the biggest types of vehicles there is a considerable improvement as regards roominess and comfort, although, as we have said, the thing chiefly lacking is a sufficient variety of bodies offering protection to passengers. Up till recently the design of the touring car has been following the lines of the racing vehicle, in the sense that it is given a very low centre of gravity with a long wheel base. As is usually the case, these features, very desirable in themselves, have been exaggerated until there is a clearance in many cases of not more than four inches between the crank chamber and gear box and the road, while the wheel base of nearly ten feet puts such heavy strains on the frame that even in the case of pressed steel frames it has been found that they sometimes permanently deform as the result of the violent shocks when riding over drains and obstacles at high speed.

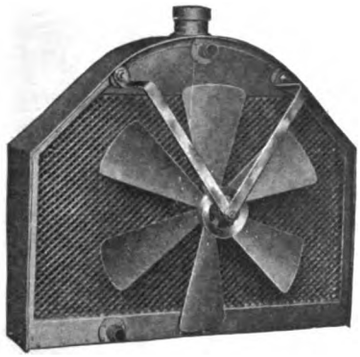
If acetylene lamps are to be expected to give satisfactory service, the gas generators should be thoroughly cleaned every time they are filled. A good way to do this is to use a hose and water under pressure, compressing the end of the hose so as to make the water stream out forcibly. See that all the residue is thoroughly removed from the generator before refilling with carbide.



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WHITLOCK COOLERS

For 1905.



The Leading Automobile Builders have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of coolis worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT.

Extemporizing a Spring.

A spiral spring for a valve or other purpose may be made out of a piece of unannealed steel wire—such as piano wire—carefully turned round a metal rod of proper thickness, and care being taken to preserve between the turns a regular distance equal to that of the spring to be replaced. It is easier to make a spring of this kind by turning the rod on which the wire is being wound than by turning the wire round the rod. When the first of these methods is adopted a brace can be utilized, a tool found pretty well everywhere. If a spring is not to be subjected to heat an unannealed brass wire may be used—that is to say, one having all the elasticity possible. Such springs are quite evidently not of such value as the tempered springs obtainable from makers of such articles, but while waiting to procure the latter those improvised as directed above will be good enough to help one out of a difficulty.

When Nuts or Bolts Go Wrong.

If one is obliged to drive with a defective bolt, it may be made secure by flattening slightly with a hammer on an anvil, a stone or other hard material, so that the nut will hold for some length of time. As a result of the hammering the bolt will be sightly oval and the nut grips on the threads of the greater diameter thus created. If it is the nut that is stripped it should be made slightly oval by means of the hammer, but if of iron it may readily crack, wherefore tap lightly. Sometimes a stripped nut may be made to hold for a time by twisting tow around the bolt before screwing up. Nuts may also be retained in position by wetting the part with spirit of salts, but the same end may be attained by slightly riveting the end of the bolt.

One Cause of Porcelain Breakage.

A frequent cause of breakage in the porcelain of a sparking plug is the excessive tensioning up of the plug holding the porcelain in position. This should only be screwed up—if one may use the expression—"hand tight," it having been found from experience that a plug so treated is practically everlasting. A frequent cause of a short circuiting in wet or foggy weather is caused by damp becoming deposited between the fly nut holding the high tension wire across the porcelain of the plug, and so to the frame. This may be avoided by winding insulating tape from the porcelain of the plug to the insulating rubber of the high tension wire, then treating the cross wire terminal on the contact breaker in a similar fashion.

A washer can be improvised out of a number of things—a piece of sheetiron, a metal button, an old nut, if a thick washer is wanted; with a piece of wire of suitable thickness a ring can be easily and rapidly made, which will be found to fulfil the purpose, besides being a simple operation for any one.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—1904 White Touring Car with top, gas lamps and side baskets. Car guaranteed first class shape; $1450.00. Reason for selling—buying 1905 Model "White." Address T. W. J. SUITE, 28 Manhattan Blk., Cleveland, Ohio.

WANTED—Fifteen to twenty traveling salesmen by a well-known and established tire manufacturing company, making standard goods. Only active men who know how to work effectively and all the time need apply. Exceptional opportunity for men of the right sort. Address, TIRES, P. O. Box 649, New York.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

FOR SALE—A solution that will not freeze for 25 cents. EMERAL WRIGHT, Box 164, Greenville, Ohio.

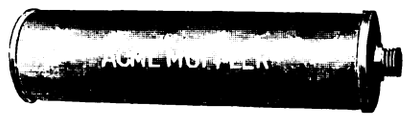
FOR SALE—Tonneaus for the Ford and Cadillac. They are large and roomy, with big round corners. CRUMRINE CYCLE CO., Greenville, Ohio.

SPECIAL LIST.

One Ford detachable delivery body, -	$40.00
Two Cadillac detachable delivery bodies,	40.00
One 1903 Olds, detachable delivery body,	35.00
Five Olds Tonneaus, just the thing for children, - - - -	12.50
Four Olds Tonneaus, large rize, - -	18.50

CRUMRINE CYCLE CO., Greenville, Ohio.

THE ACME IMPROVED 1905 MUFFLER.



Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

AUTOMOBILE.
STATIONERY.
MARINE.

ACME MOTOR CAR & REPAIR CO.,

Cleveland, Ohio.

Southern Agents: A. L. DYKE, 311 Pine St., St. Louis, Mo.
Eastern Agents: SMITH & EDWARDS, 116 Nassau St., New York City.
Western Agents: E. J. DAY & CO., 519 Mission St., San Francisco, Cal.

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The Week's Patents.

774,725.—Cylinder cooling system for internal-combustion engines. Charles W. Hart, Charles City, Iowa. Filed April 3, 1903. (No model.)

Claim.—The combination with the cylinder of an internal-combustion engine of a jacket partially inclosing said cylinder; a radiator comprising an oil-chamber having its upper and lower portions connected with the jacket and provided with a series of tubular air-passages; a hood connecting the upper ends of said air-passages and provided with a discharge passage leading to the exterior; and a duct leading from the exhaust-port to, and discharging into, the hood in the direction of said discharge passage, said radiator oil chamber and cylinder jacket being filled with oil and hermetically sealed substantially as described.

774,758.—Electric spark-gap. Thomas B. Kinraide, Boston, Mass. Filed May 25, 1904. Serial No. 209,686. (No model.)

Claim.—In an electric spark-gap, having opposite discharge electrodes, heat separating means consisting of a series of thin members of heat-conductive material extending laterally outward and located contiguous to the discharge-gap for diverting and separating from the electric current the heat effects and providing a cool discharge between said electrodes.

774,771.—Self-propelled vehicle. Chester B. Mills, Wilkinsburg, and Anthony Williams, Pittsburg, Penn. Filed June 20, 1903. Serial No. 162,373. (No model.)

Claim.—In an improved vehicle, running gear, a frame and a body separately mounted thereon, separate springs for the frame and body, and a vertically sliding connection between the frame and body.

774,790.—Pneumatic tire. Edward H. Seddon, Broklands, Eng. Filed Nov. 24, 1903. Serial No. 182,538. (No model.)

Claim.—A pneumatic tire provided with an inflating valve, adapted to fit a felly having an annular groove in one side at the corner and having annular flanges projecting above the felly, one of which flanges partly covers the said groove and is detachable, which tire consists of an annular tube having a flat bottom adapted to sit upon the felly between the annular flanges, an annular joint at one side of the bottom and an outside flange formed at the edge thereof, a "dovetail" head formed upon the inside margin of the other side of the tire at the joint adapted to enter the said groove and bear against the other flange of the tire when the detachable flange of the felly is secured thereto substantially as and for the purpose herein described.

775,009.—Vehicle wheel. Ralph Lancaster and Joseph H. Lancaster, East Orange, N. J. Filed Jan. 20, 1904. Serial No. 189,789. (No model.)

Claim.—A vehicle wheel comprising inner and outer hubs provided with lugs, the lugs on one hub overlapping and alternately arranged with respect to the lugs on the other hub, and a separate elastic cushion or ball inserted between each two consecutive overlapping lugs.

775,103.—Internal combustion engine. James F. Duryea, Springfield, Mass. Filed Dec. 22, 1902. Serial No. 136,168. (No model.)

Claim.—The combination with an internal combustion engine, having an adjustable inlet valve and a carbureter operatively connected with the engine through said valve, of means for adjusting said valve, and connections between said valve adjusting means, and a part of said carbureter, whereby the adjustment of the valve may be effected independently within certain limits, and whereby beyond these limits, the valve adjustment, and the adjustment of the carburetter may be effected coincidently.

775,120.—Explosion motor. Fritz Henriod-Schweizer, Marin, Switzerland. Filed Dec. 10, 1902. Serial No. 134,807. (No model.)

Claim.—In an engine, the combination with the cylinder, the explosion chamber, and the feedpipe, of means for forcing a current of air over and in contact therewith, and side plates provided with deflecting ribs adapted to prevent the diffusion of the air current and to direct the same upon the parts subject to heating.

775,150.—Automobile. Soren C. Rockman, Philadelphia, Penn. Filed Jan. 21, 1904. Serial No. 190,065. (No model.)

Claim.—An automobile having a main frame, a truck frame pivoted beneath the forward end of the same, a pair of steering wheels and forward and rear pairs of driving wheels, the forward pair of driving wheels and the steering wheels being carried by the pivoted truck, the main frame extending over all of said wheels and the connection between the main frame and the truck frame being so disposed as to distribute the weight evenly upon the three pairs of wheels, substantially as specified.

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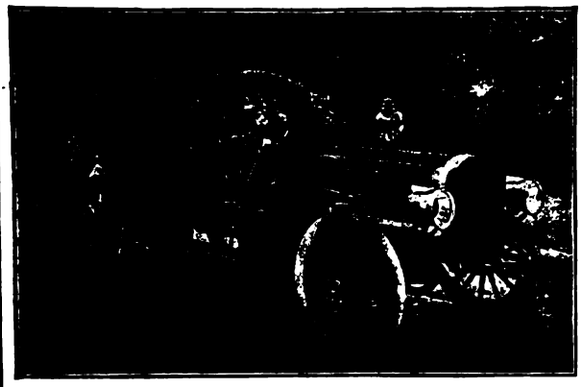


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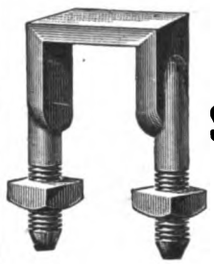
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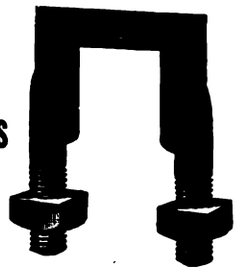
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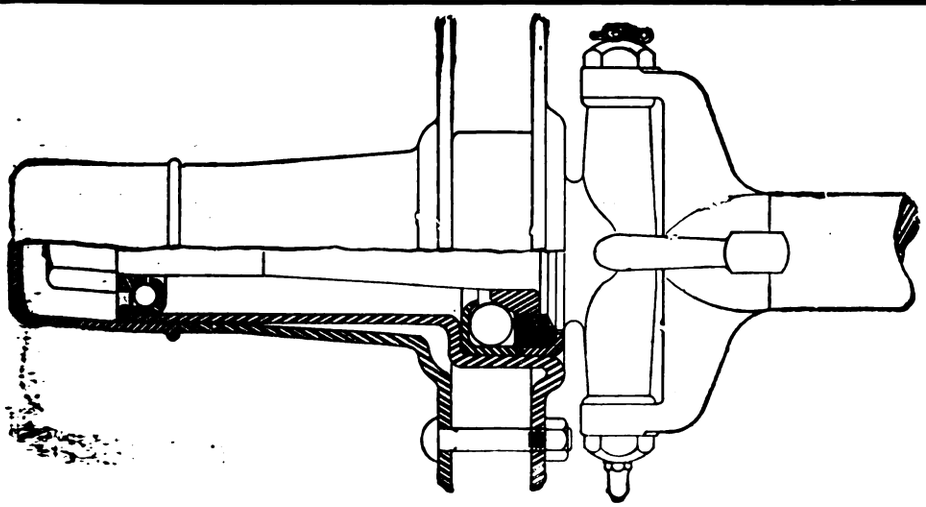
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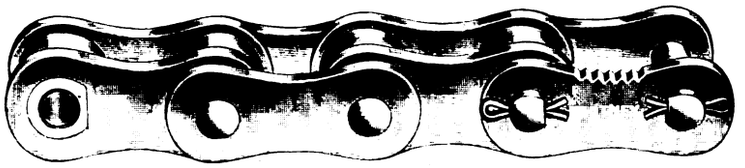
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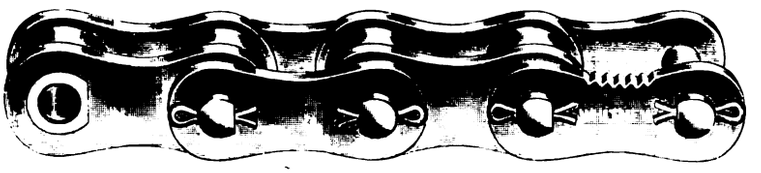
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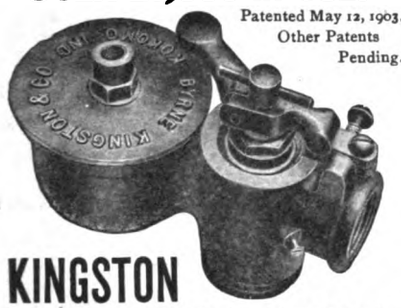
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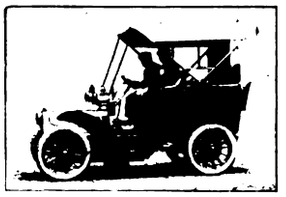
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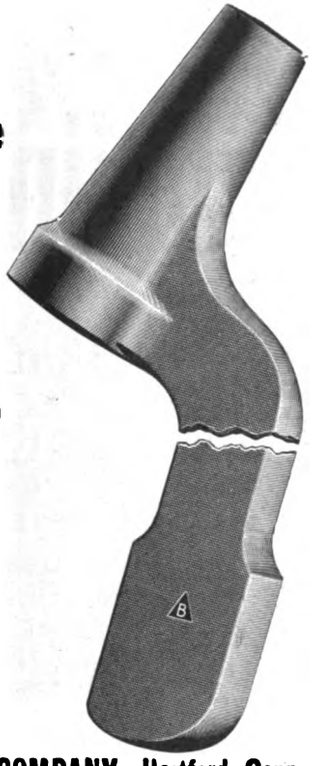
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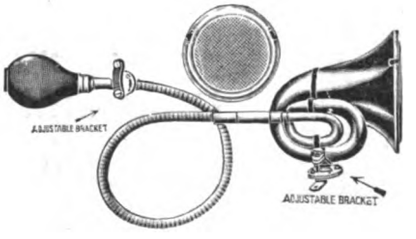
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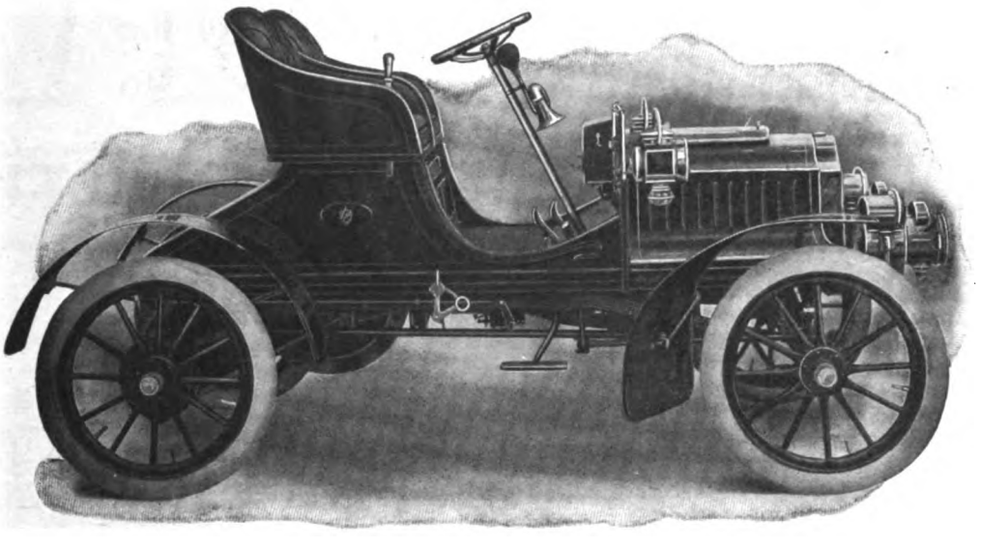
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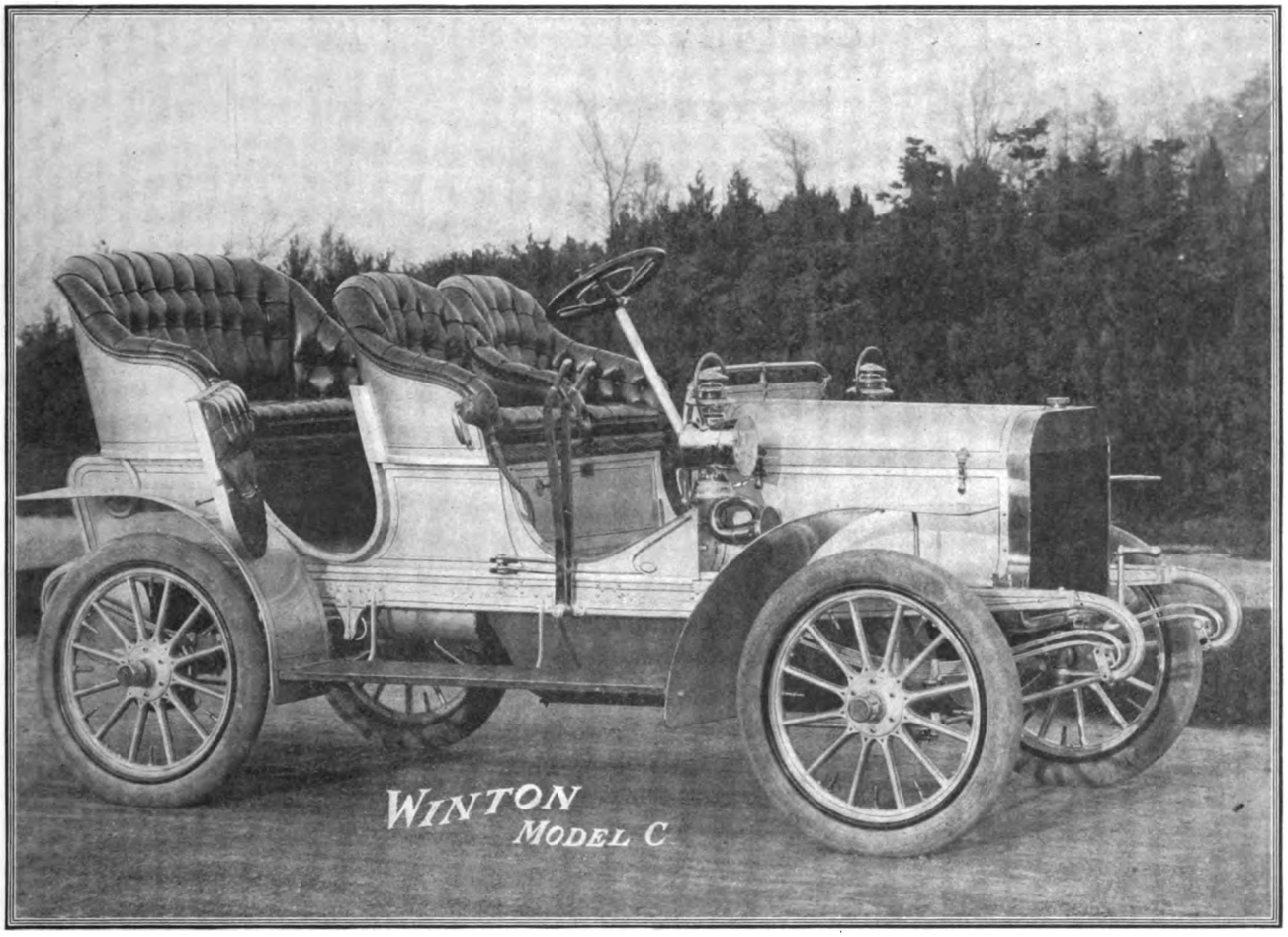
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Model A, 40 H.P.,	**3500**
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All models have four-cylinder vertical motors.

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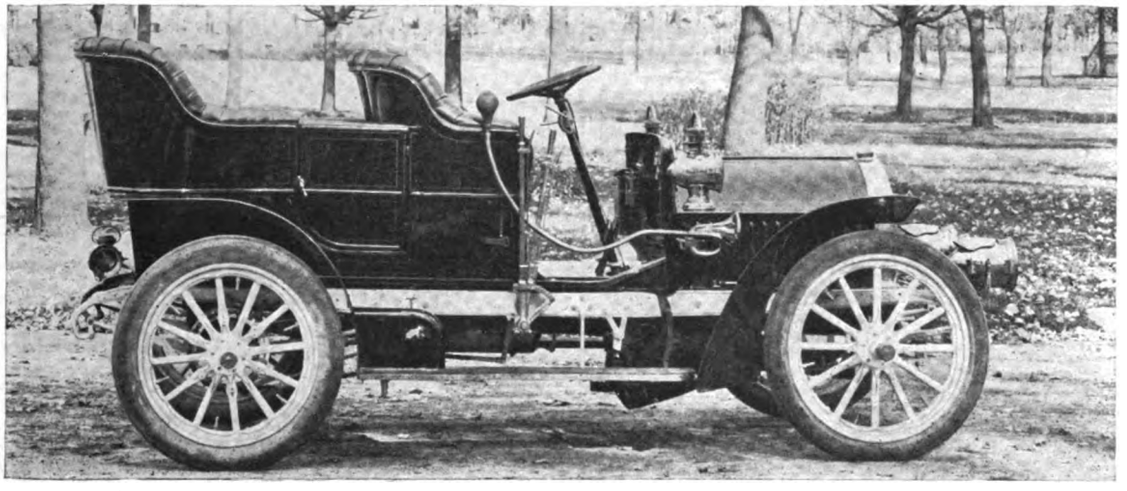
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15-20 H. P. MODEL. PRICE $2800, COMPLETE.

Equipment includes five lamps of best quality and full assortment of tools, accessories and spare parts all ready for touring. All cars similarly equipped.

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15-20 H. P. $2800	20-25 H. P. $3700	30-35 H. P. $5000	40-45 H. P. $7500
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Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

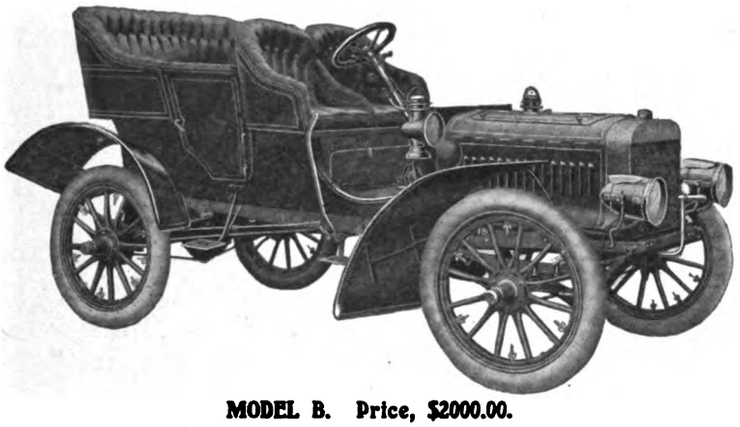
Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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The FORD 1905 Cars

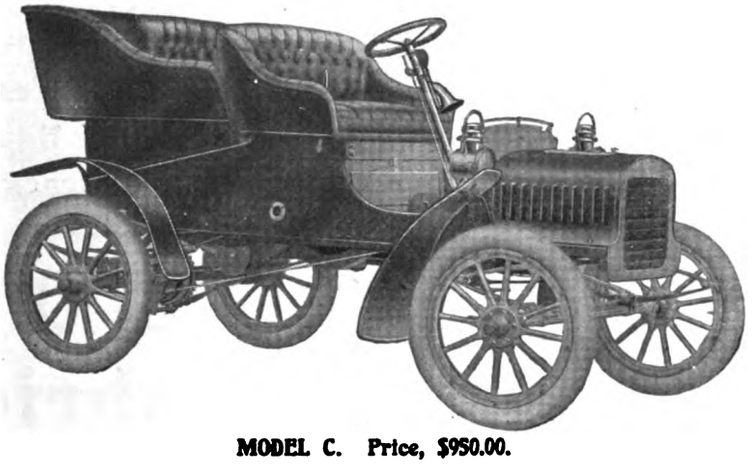


MODEL B. Price, $2000.00.

HENRY FORD'S LATEST AND GREATEST SUCCESS.

Our 1905 Touring Car weighs only 1710 lbs. The 4-cylinder vertical motor develops over 20 horse power, SO THAT THIS CAR HAS MORE POWER FOR ITS WEIGHT THAN ANY CAR IN THE WORLD. This means considerably less wear on the tires and consequently a great saving to the owner. It also means there is ample reserve power for steep grades and sandy roads.

Wheel base, 92 inches; direct drive, with universal coupling; cylinders, 4 x 5, water cooled; automatic oiling device with force feed; large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car place this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horse power, planetary transmission, chain drive, and increased gasoline capacity. The most stylish, low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. Write us To-day for Full Information.

THE FORD MOTOR COMPANY, - Detroit, Mich.

JOHN WANAMAKER, Selling Agent for New York and Philadelphia.

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Mile Record, 52 1-5 Sec.

BULLETIN OF

G & J RECORDS

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.
Peerless Green Dragon,
by Barney Oldfield:
9:12 3-5.

WORLD'S TRACK RECORDS,
Peerless Green Dragon,
by Barney Oldfield:

1 mile,	0:52 1-5
2 miles,	1:51 1-5
3 miles,	2:47 ...
11 miles,	10:18 1-5
12 miles,	11:15 ...
13 miles,	12:12 1-5
14 miles,	13:09 ...
15 miles,	14:05 ...
16 miles,	15:01 ...
17 miles,	15:57 ...
18 miles,	16:33 ...
19 miles,	17:49 2-5
20 miles,	18:45 2-5

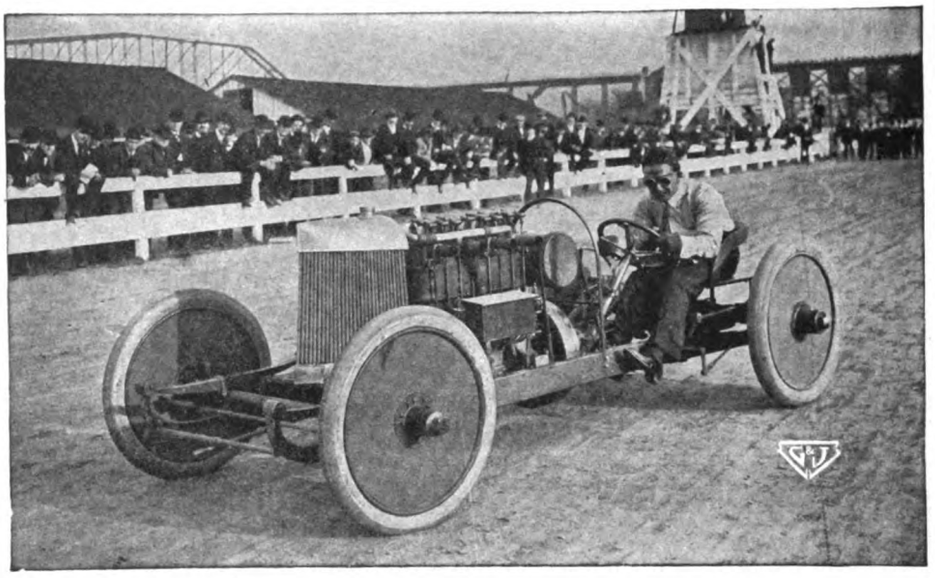
WORLD'S TRACK RECORDS
FIVE MILES,
For LIGHT WEIGHT and MIDDLE WEIGHT CARS.
Ford Racer,
by Frank Kulick:

1st	mile, 59	sec.
2nd	" 57 2-5	"
3rd	" 56 4-5	"
4th	" 55 1-5	"
5th	" 55 1-5	"
Total,	4:43 3-5	

WORLD'S 1-MILE TRACK RECORD
for LIGHT and MIDDLE WEIGHT CARS.
20 H. P. Ford,
by Frank Kulick,
55 sec.

WORLD'S 1-MILE TRACK RECORD FOR TOURING CARS.
Pope-Toledo,
by George Fuller:
1:00 3-5.

WORLD'S 10-MILE TRACK RECORD FOR TOURING CARS.
Peerless.
by Barney Oldfield,
10:50 1-5.



BARNEY OLDFIELD

IN THE

PEERLESS GREEN DRAGON

places the mile track record at the above remarkable figure on the Denver track.

G & J
Thread Fabric Tires

are FAST, SAFE and DURABLE.

Main Office and Factory:

G & J TIRE CO. Indianapolis, Ind.

Branches: Chicago and Detroit.

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GOODRICH TIRES

last through a season of hard racing and still in good condition.
Other tires on the same tracks were barely good enough for one heat.
Racing tires must be of the strongest construction. All GOODRICH tires are racing tires.



The B. F. Goodrich Co., Los Angeles, Cal. Oct.6,1904.

Akron, O.

Dear Sirs:-

I am indeed glad to place myself on record as an ardent advocate of your Goodrich Clincher Tire with which I have had four years experience in direct competition with other makes of tires and I truly believe them to be absolutely the best clincher tire on the American market today.

I used a set of Goodrich tires which had been put on my machine at San Francisco in November 1903 and which tires I used for three days hard racing at Ingleside where the car won its first race over Barney Oldfield; it was then shipped to Los Angeles and did two days hard racing here giving Oldfield a hard chase for his money on two occasions; the same car was used nearly every Saturday during the summer and then shipped to Del Monte where it raced two days fast racing winning the two open events with every mile better than 1.04; it was then shipped again to Los Angeles and I can truly say that these tires are still in good condition and ready for more fast work at the coming meet Oct.21st. These tires have never once had a pump put on them after being fitted to the rims at San Francisco last year. All other makes of tires were repeatedly replaced between races and heats at Del Monte; at least six times on one particular car where four different makes of tires were used, none of which I am glad to say were Goodrich.

Yours very truly,

WHITE GARAGE

H. D. Ryus Mngr.

THE B. F. GOODRICH COMPANY, Akron, Ohio.

NEW YORK, 66-68 Reade St. and 1635 Broadway.
SAN FRANCISCO, 392 Mission St.
BUFFALO, 9 W. Huron St.
CLEVELAND, 420 Superior St.
BOSTON, 157 Summer St.
DETROIT, 80 E. Congress St.
CHICAGO, 141 Lake St.
LONDON, E. C., 7 Snow Hill.
PHILADELPHIA, 909 Arch St.
DENVER, 1444 Curtis St.

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LOOKING BACKWARD, 1904.

Office of
DR. JOHN A. PRINCE,
628 West Capitol Ave.,
Springfield, Ill.

ACME MOTOR CAR CO., Reading, Pa.

Dear Sirs: In answer to your favor of the 4th inst., I will say that after two seasons' use of the Acme Car I am perfectly satisfied with it. It always gets me there and brings me back, and I have never dealt with a more obliging firm than the Acme Motor Car Company. Wishing you continued success, I am,

Very truly yours,
JOHN A. PRINCE.

July 11, 1904.

LOOKING FORWARD, 1905.

The Best Car that Money and Brains Can Build.

At the same Price the Other Fellow sells a much inferior Car at.

Cars that will Look Well.

Demonstrate Well, and Stay Well.

In fact, the EASIEST SELLING CARS in the World.

An interesting description of our 1905 line, with a profitable agency proposition, will be sent for the asking to live dealers.

ACME MOTOR CAR COMPANY, - - Reading, Pa.

THE MICHIGAN

LIGHT TOURING CAR FOR 1905

WILL CONSIST OF TWO MODELS, "D" AND "E"

Both will be equipped with the Michigan 2-cylinder 14-H. P. motor, which has proven so satisfactory the past season. Model D will have a removable tonneau and rear entrance, Model E a stylish side entrance body of very swell handsome design. Both have French bonnets, expanding hub brakes, and many other excellent features. Prices reasonable.

New catalog will soon be ready. Send in your name. Write for agency.

Michigan Automobile Co., Makers,

KALAMAZOO, MICH.

NORTHERN AUTOMOBILES

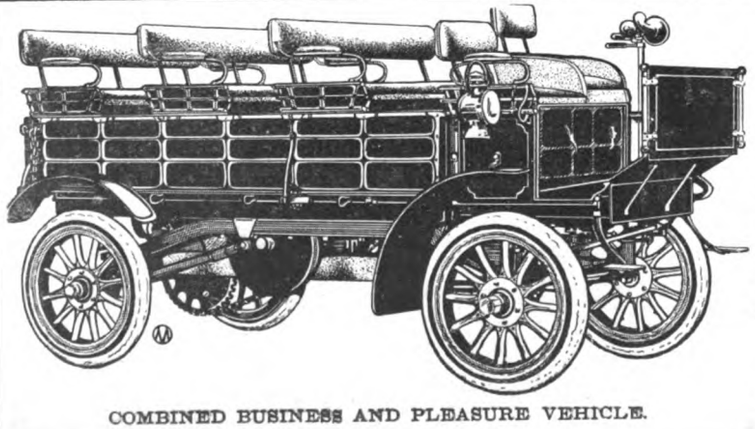


Northern Runabout
6½ Horse Power, Price $750

Handsome outline and finish that appeals to the customer; convenient box under front dash for storm apron, tools, etc. All working parts enclosed and dust proof; most silent operator extant.

NORTHERN MANUFACTURING CO.
Detroit, Mich., U. S. A.

Member National Association Licensed Automobile Manufacturers.



COMBINED BUSINESS AND PLEASURE VEHICLE.

KNOX Waterless Commercial CARS

Are the Highest Type of Delivery Mode.

The artistic atmosphere is felt in every design; the architecture has that finishedness and permanency that indicate workmanship of the most skilled, most expensive calibre. Of course, beauty does not make a Commercial Car—but it is an integral part of present-day delivery service. And underneath this commercial magnificence there is the Knox mechanism, with an incontestable record for reliability—unapproached and unapproachable by any other make.

If you want the quickest, the most reliable, the most beautiful and the cheapest method of local delivery select a Knox. There is evidence of it at agents' or from us.

KNOX AUTOMOBILE COMPANY,
SPRINGFIELD, MASS.

Member of the Association of Licensed Automobile Manufacturers.
Selling agencies in all principal cities.

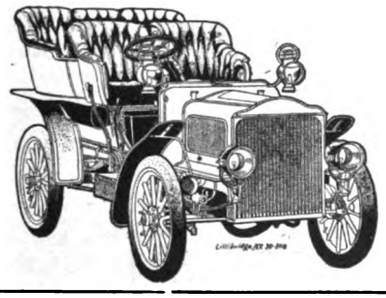
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The Incomparable WHITE

CLIMBS HILLS.

Result of the Eagle Rock Hill Climb.

Car.	H. P.	Value.	Time.
Renault	60	$10,000	1 m. 20 s. (flat)
Mercedes	90	16,000	1 m. 20 3-5 s.
F. I. A. T.	90	16,000	1 m. 22 s.
F. I. A. T.	90	16,000	1 m. 22 1-5 s.
WHITE	**15**	**2,500**	**1 m. 23 3-5 s.**
F. I. A. T.	60	13,500	1 m. 24 4-5 s.



THE 1905 WHITE.

SEND FOR PARTICULARS.

WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.



The Maxwell



PERFECTLY SIMPLE — SIMPLY PERFECT

The Keynote of Maxwell Construction is Simplicity.

The minimum number of parts have been used, but into each the brain of the designer has put such thought, such study, that a maximum of practical value has been attained in each detail.

The Maxwell has no pump (thermo-syphon). Its crank and transmission case are cast in one piece of aluminum, and the double-opposed motor is so attached that they form a perfect whole. It is unnecessary to lift floor-boards or crawl under the car to get at any of the vital working parts.

The Maxwell, on account of its correct design and perfect workmanship, is exceptionally quiet, easy running and vibrationless. In every quality it is a car that will serve you well year in and year out, a practical car for practical people.

The Maxwell plant cost over $350,000, and has the most complete equipment of automobile machinery in the world. It is *not* an assembling plant, but one where every part of the Maxwell Automobile is actually made under the direct supervision of its designer, Mr. J. D. Maxwell.

This concentration of energy under one roof puts us in a position to promise our customers that promptness of delivery and absence of red tape that so often hampers the agent in making sales.

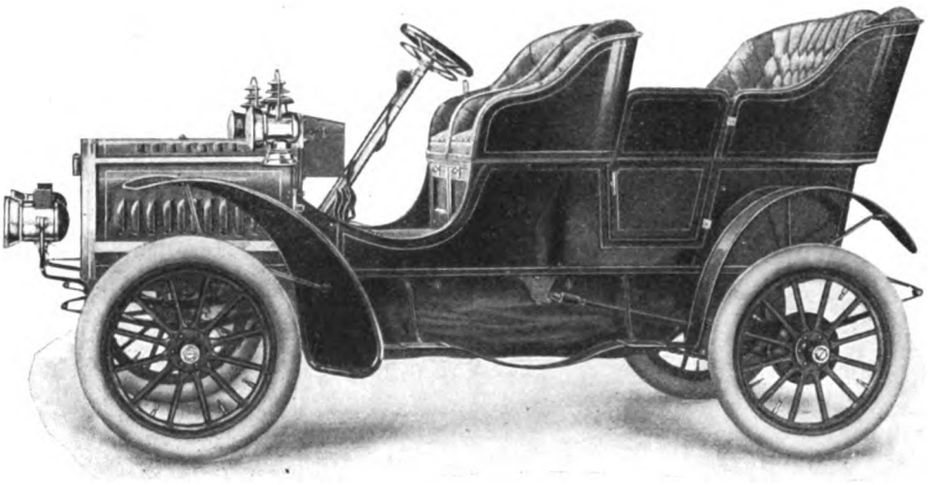
Although a new firm, the Maxwell-Briscoe Motor Co. is old in experience. Both Mr. Maxwell and Mr. Briscoe have been closely allied with every improvement in construction since the invention of the automobile. For twelve years they have been steadily working toward the completion of this car. Everything that patience, brains, and capital can do, has been put into its construction—the result is perfection.

Write us for information.

MAXWELL-BRISCOE MOTOR COMPANY, - - Tarrytown, N. Y.

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Rambler



SURREY, TYPE ONE. 1905 Model.

2 CYLINDERS, 16 H.P., $1350. IMMEDIATE DELIVERY.

Thursday afternoon, October 13, Arthur Gardiner, whose name was formerly well known on the cycle track, and who now is final tester of every RAMBLER car made, drove the writer in a new Surrey, Type One, for a twenty mile run about Kenosha. The country is perfectly flat, and the black soil makes poor roads, deeply rutted, so that this high speed run furnished no hill climbing, but plenty of spring and power testing, as a narrow, deep rut made by farm wagons in soft roads pinches pneumatic tires, and tests the springing by side crooks. Part of the time the car had four passengers and part of the time it was on very bad, soft, muddy, uneven roads, always riding very smoothly, without the slightest tremble of the free front ends of the mud guards, which is most convincing proof of entire absence of vibration, and always with abundant power to spare. The car is as still as it should be, silencing perfect, no bouncing, easy side swing, and prompt response in every particular of control.—HUGH DOLNAR, page 86, *et. seq.* *Cycle and Automobile Trade Journal*, November, 1904.

We shall be pleased to send you a copy of THE RAMBLER MAGAZINE, and other printed matter, free, upon request.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 304-306 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

NEW YORK AGENCY, 134 West 38th Street. REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, December 1, 1904. No. 10

FOR A PARTS SHOW

Discussion Finally Assumes Form—The Argument in Favor of the Departure.

What has been in the wind for some time, and met with more or less informal discussion, is to be brought up for official consideration at the meeting of the Executive Committee of the National Association of Automobile Manufacturers on the 7th inst., that is, the advisability of holding separate shows for complete cars and for parts and accessories, the latter in the late summer or early fall, say August or September. It is understood that, in advance of the meeting, a plan for such a show already has been submitted in writing to the members of the Executive Committee.

The matter has been brought to a head by the utter inability of the Association to meet the demands for space at either New York or Chicago. It is asserted that it is absolutely impossible to continue the shows on their present basis, not merely because of the increased number of makers, but because of the greater number of models and of the larger sizes of models which are now in vogue, and also because of the multiplication of accessory manufacturers.

The plan for the parts show embraces the display of chasses and commercial vehicles which, it is stated, will not hereafter be accorded space in the national shows, as now constituted. Those who advocate the parts show maintain that it will settle all conflicting ideas as to the proper date for the national shows, and that it will also enable the parts man to better prepare for the demands of the manufacturer and thus assure prompt deliveries and reduction of expenses for overtime and rush work on the part of all concerned.

It is also held that the development of the commercial vehicle requires actual demonstrations, such as are not possible in Madison Square Garden or at the Chicago Coliseum. The location of the exhibition of parts would be influenced by this consideration.

It is proposed that admission to the parts show shall be confined to tradespeople and such others as may be invited.

Fox on the Scent of $8000.

Graham and Fox are "out," and Fox has instituted suit for $8,000 against the Eisenhuth Horseless Vehicle Co., Middletown, Conn., with which his erstwhile partner in the Graham-Fox Co. has "taken sides."

It is the old, old story of a couple of men with a "wonderworker" finding a capitalist with a factory and after many weary months of trying to produce cars, of falling apart and then rushing to court. Eisenhuth was the capitalist and factory owner, and the Graham-Fox compound motor, which utilized the exhaust, was the "wonderworker." For about a year the work was prosecuted in the Middletown plant, but if more than one car ever was produced there is no general knowledge of it.

Some two months ago the factory came to a standstill and apparently there was "nothing doing" until last week, when Fox—Frank A.—filed his suit and attached the only "compound" car in evidence. Fox alleges breach of his contract, which was for a term of two years. It is charged, however, that he one day voluntarily left the factory and, failing to return within a reasonable time, was notified that his services were no longer required. His absence is claimed to have nullified his contract.

Cleveland Dealers Elect Officers.

The Cleveland Automobile Retail Dealers' Association, which was recently incorporated as the Cleveland Automobile Dealers' Co., last week elected the following as officers of the corporation:

President, Mr. Price, of Price Brothers; vice-president, G. F. Russel, Ohio Motor Car Co.; secretary W. S. Waite, White Sewing Machine Co.; treasurer, C. M. Brockway, Winton Co. Directors—The president, secretary and treasurer and Henry Chisholf, Chisholm-Phillips Co.; Ralph Owen, Oldsmobile Co.; W. N. Booth, W. N. Booth Motor Co.; A. L. Sopel and H. L. Moore.

Knox Opens In Buffalo.

The Knox Automobile Co. is opening a branch house in Buffalo—in the new Rich Building at Main and Tupper streets. Francis L. Thomas will be its manager.

FOR UNIFORM RATES

New York Dealers Agree on Figures for Many Services—The Chauffeur Problem.

At last the New York Automobile Trade Association seems on the point of doing something—of producing tangible results of a character to fully justify its hitherto tranquil existence. Its classification and rate committees have formulated a plan for securing uniform charges for the storage of cars, and for sundries and repair work. The report of the former is having the finishing touches put on it, and it is to be approved and put in force on January 1. In addition, the plan of maintaining a quasi employment bureau for chauffeurs has been found unworkable, and, in its original form, abandoned; a modified plan of keeping track of chauffeurs will, however, be maintained.

In a large part, the present activity of the Association is due to the employment of a paid secretary, Wm. P. Kennedy, who brings to the position a thorough knowledge of local conditions, an aptitude for detail work and a sufficiency of time to devote to the task of planning and carrying out the various schemes undertaken. Taken in conjunction with a more active interest in the work by the other officers and members of the Association, and a determination to accomplish something definite, the change has worked wonders.

At the last meeting of the Association, held at the Hotel Navarre on November 16, the Rate Committee, to which had been intrusted the task of framing a uniform rate schedule and issuing rate bulletins to be posted in members' garages, presented a report in which these recommendations were made:

First—That as far as it is posible all members make the storage rate on large tonneau cars twenty-five dollars ($25) per month; small tonneau cars, twenty dollars ($20) per month, and on runabouts with two seats only fifteen dollars ($15) per month.

Second—That a resolution be adopted by the members of the Association at the regular meeting to the effect as follows:

Resolved, That whereas cost of high grade

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machine labor is steadily increasing in the automobile business during the last few years, and whereas the highest grade of men must be selected from other trades and drafted into the automobile business, and by reason of the difficulty of retaining high grade mechanics in the employ of the Association, owing to the inducements held out by owners of automobiles for them to become chauffeurs, it is unanimously decided that proper service cannot be given and a living profit given to the parties maintaining a high grade automobile business, at a ratio of mechanical labor at less than 75 cents per hour, and that this sum be from now on charged by all members of the Association, and customers notified to that effect. That a copy of this resolution be printed, signed by the Association, and names of the members printed below and furnished in quantities to each member for distribution.

Third—It is recommended that the standard rate for transition storage be $1.50 for any part of twenty-four hours, including one washing and one cleaning of brass (by transition is meant storage customers other than those who maintain an open charge account).

Fourth—It is recommended, for the reason that many expensive and high grade machine tools are apt to be ruined and made useless for further high grade work thereafter by incompetent parties, that use of the tools and machinery of the members of the Association be denied to chauffeurs or others not in the employ of the Association. This, of course, excludes the use of special benches and tool rooms fitted specifically for use of chauffeurs where such exist.

Fifth—The following infirmation regarding towing is placed before your Association by your committee: In towing customer's cars into your garage you are responsible for any damage inflicted either by the car towing or the machine towed or to either one of them; furtner responsible for accidents to pedestrians or the public in general and subject to suits for damage if any is inflicted. For this reason it may be stated that arrangements can be made with outside parties for towing if so desired. One member reports being able to make very satisfactory arrangements with the New York Transportation Company whenever a tow is required.

Sixth—It is recommended that a standard charge for machine oil (in which is included all of the lower grade oils for lubrication) be 40 cents, and for cylinder oil not less than 80 cents a gallon.

Seventh—It is recommended that not more than one locker be included in the contract price for storage of each automobile; that the charge for extra be $2.

The report was adopted with the proviso that it take effect on January 1. It was also voted to delegate to the Classification Committee the task of compiling a complete list of charges to cover every car carried in New York, and submit it for action by the Association at its next meeting, which will take place next week. This list will, in effect, take the place of the first paragraph in the foregoing report. Its purpose is to put an end to all haggling and dispute over storage charges by fixing a specific charge on every car that is likely to be brought to any member of the Association. A question may arise as to whether a car is a runabout or a small tonneau, or where the line of demarcation is between a large and a small tonneau. Taking advantage of this an owner may go from one garage to another, asking rates and pitting one dealer against another. By adopting a flat rate for each car this will be avoided; a dealer has but to consult his list to see what the charge should be. The Classification Committee has its schedule prepared, and the charges range from $15 up. Odd figures, such as $17.50, $22.50, etc., appear on the schedule.

As stated, the Association has also threshed out the chauffeur problem pretty thoroughly and decided on its future course. It will be recalled that some time ago the experiment was tried of having chauffeurs in search of jobs fill out blanks and send them to the secretary. These blanks contained the names and addresses of the employment seekers, their record, evperience and a mass of other details. Whenever a member of the Association or one of his customers wanted a chauffeur requisition was made on the secretary, who fished out some of the most likely blanks and sent copies of them to the inquirer.

The plan worked only indifferently well. When it was sought to elaborate it and to make it more valuable and useful, with the idea of making a small charge for the work, the Association found itself running counter to the city License Bureau. Such a plan, the latter claimed, was equivalent to conducting an employment bureau. To do this a fee of $1,000 would have to be paid and comprehensive and regular reports from the Association would have to be made. This being so, it was decided to relinquish the idea of elaborating the system.

This decision carried with it a change in the method in use also. It was found that very few of the desirable chauffeurs made application by means of the blanks; it was the ne'er-do-well kind that did so, and the impossibility of examining each case, which it was intended to do if the plan of charging a fee had been adopted, made the whole system a most unsatisfactory one.

In the future, therefore, a list of chauffeurs will be kept by Secretary Kennedy—not a blacklist exactly, but a list of men regarding whom it is wise to make inquiry. If a member of the Association desires information regarding one of these men the secretary will put him in touch with another member who has knowledge of the chauffeur and let the two exchange views.

It is not held, either by Secretary Kennedy or the Association, that this is a satisfactory solution of the matter. Any solution seems at present impossible of attainment. Some good will undoubtedly be done by the present arrangement, and there is a probability that the local Y. M. C. A., which is at present conducting an automobile school, will apply itself to the task of bringing about an improvement in the methods of supplying chauffeurs. It is even a possibility that an employment bureau will ultimately be established.

Small Failure in New York.

A petition in bankruptcy was filed last week against the General Automobile and Repair Works, of 764 Eleventh avenue, this city, by the following creditors: William J. MacFarquhar, $400; John J. Ivory, $100, and Stefano Greco, $3. It was alleged that on November 25 the corporation admitted in writing its inability to pay its debts.

The corporation was organized under New York laws, with a capital stock of $1,500, with Charles Lein as president and treasurer.

On Monday Judge Holt, of the United States District Court, appointed Pratt A. Brown receiver for the company. His bond was fixed at $1,000. It is stated that the concern has liabilities of $4,000, divided among thirty creditors, and $2,000 of assets. The latter consists of machinery tools and accounts.

Two Where but One Existed.

The Wheeler Mfg. Co., Detroit, have disposed of their bicycle saddle business to a new concern, the Wolverine Leather Specialties Co., Detroit, of which Walter Thorn is president and general manager and A. B. Packard secretary and treasurer. The Wheeler company will continue on a much larger scale the manufacture of their several styles of tops, and will make in addition a full line of storm aprons, hampers, brass trimmings, covers, etc., and will also carry a full jobbing line of other accessories.

The Wolverine Leather Specialties Co. will continue the name "Wheeler" on the saddle, and will also produce a complete line of specialties in leather for the automobile and carriage trades.

Unwin Gets a Good Start.

Harry Unwin, after a term of service in the sales department of the Olds Motor Works, is again in New York and in the Journal Building, Broadway and Fifty-ninth street, has just hung out his shingle as the Harrolds Motor Car Co. He will handle the Olds and Pierce Arrow cars, from which names, assisted by his own prefix, the title of his establishment is compounded. The store occupies the entire Broadway front of the Journal structure and practically facing the entrance to Central Park, is one of the choicest locations in the city. Unwin's financial sponsors are Steiner & Sons, wealthy night shirt manufacturers, who have put a large block of capital into the business.

Adams Gets the Corbin.

The New York agency for the Corbin car has been placed with well known George B. Adams. The location of his salesroom has not yet been selected.

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KNOX UNVEILS 1905 LINE

Two New Models Embody a Number of Changes—Power and Weight are Reduced.

For 1905 the Knox line will consist of two entirely new models—a runabout convertible into a four passenger vehicle, and a side entrance tonneau. Both are handsome and attractive appearing cars, and differ markedly in outward semblance from the 1904 models, although the design and construction of engine, transmission, etc., of the latter has undergone no material change.

The two models are identical in all essential respects except the bodies. The power plant of each consists of a 14 horsepower double opposed horizontal engine, positioned centrally and driving through a central chain to a live rear axle; the 1904 double cylinder cars developed 16 horsepower. This power reduction is occasioned by the use of 5x6-inch cylinders in place of 5x7-inch, as were used this year. A proportionate reduction in weight —from about 2,700 pounds to under 2,000 pounds—more than compensates for this diminution of power, while the decrease in piston stroke is in line with the latest trend in engine design.

Both models are constructed with square bonnets, which, although "blind," are indistinguishable from the regulation engine housing bonnets seen on cars with vertical motors. Wheel steer is another change from Knox methods of the past, and the engine itself has been improved by some changes in valve construction. The side entrance tonneau car is a roomy and luxurious looking vehicle, while the runabout is, as stated, convertible to a four passenger car by means of an ingenious arrangement whereby the rear part of the body is opened up to make a cushioned seat.

The price of the runabout is $1,700 and of the side entrance car $1,850.

Two Models from Michigan.

The Michigan Automobile Co., Kalamazoo, Mich., will market two cars next season, Models D and E, as they will be styled. Model D will be substantially the same as this year, with the addition of a French bonnet. Model E will be a side entrance car, the body being of very handsome design, with divided front seat. The wheel base will be 86 inches, wheels 30 inches, tires 3½ inches. Model D, with 3½ inch tires, will sell for $1,100, with 3 inch tires, $1,050. The price of Model E will be $1,250. Both cars will be equipped with a two-cylinder horizontal motor of 14 horsepower.

Duerr Takes on the Pungs-Finch.

The Pungs-Finch car is the most recent Detroit production to obtain entry to New York. The agency for it has been taken by the Duerr-Ward Co.

The Week's Incorporations.

New York, N. Y.—Union Motor Supply Co., under New York laws, with $25,000 capital. Directors—Rene E. Jarrige, Jesse J. Beeitler and Frederick C. Truckheim, New York.

New York, N. Y.—Harrolds Motor Car Co., under New York laws, with $30,000 capital. Directors, Edward J. Steiner and Edward Brand, New York, and Harry Unwin, Detroit.

Chicago, Ill.—McDuffie Automobile Co., under Illinois laws, with $2,400 capital; to manufacture and rent automobiles. Incorporators: J. H. McDuffie, W. E. Harvey, H. L. Babcock.

Jersey City, N. J.—National Automobile Co., under New Jersey laws, with $250,000 capital; to manufacture and sell automobiles. Corporators: Louis B. Dailey, H. C. Coughlan, B. Stafford Mantz.

Detroit, Mich.—Hammer Motor Co., under Michigan laws, with $10,000 capital; $1,000 paid in cash, $2,000 in patents, etc. Stockholders: Henry F. Hammer, Leon J. Pasyki, Foster W. Allen and Harry W. Nichoalds.

St. Louis, Mo.—Union Automobile Mfg. Co., under Missouri laws, with $12,000 capital, full paid; to manufacture and sell automobiles. Stockholders: Benjamin B. Hulbert, Geo. H. Martin and Geo. B. Louderback.

Columbus, O.—Automobile Garage Electrical Construction Co., under Ohio laws, with $5,000 capital. Incorporators: C. A. Rosa, J. B. Rhodes, E. F. Triplett, A. A. Douglass, O. A. Osborne and L. R. Slocomb.

Detroit, Mich.—Wayne Automobile Co., under Michigan laws, with $300,000 capital; $8,200 paid in cash, $240,000 in stock of automobiles valued at $43,331.06, goodwill of the business, inventions, etc., of William Kelly, valued at $172,561.94, and other property of the old partnership concern. Incorporators: Charles L. Palms, William Kelly, Roger J. Sullivan, J. B. Book and E. E. Skae.

To Settle a $20,000 Wager.

Maurice Fournier has started on a 4,600 kilometre tour through Europe in an Oldsmobile. He is making the trip to settle a wager betwen Henri Fournier and M. Dertelle, of $20,000. The conditions were that any Oldsmobile in the Paris salesroom of Henri Fournier was to be selected at random and it was to cover the entire distance without undergoing substantial repairs. The route of the tour was as follows: Paris to Bordeaux, Toulouse, Marseilles, Nice, Genoa, Pisa, Rome, Venice, Vienna and Berlin, re-

Olds Interests Change Owners.

Charles P. Adams has purchased and taken over the Oldsmobile Co. of New England, which under the same style will be continued at 239 Columbus avenue, Boston. The purchase carries with it the Olds agency for Boston and that portion of Massachusetts east of Worcester County, Bristol excepted. Adams will appoint sub agents in his territory and will carry a full stock of Oldsmobile parts for which he is exclusive agent in New England.

HE SAW NO ROSE HUES

Frenchman, after Visiting England, Delivers Himself of Some Pessimistic Opinions.

British, and especially London, trade is in a very serious condition, if a French tradesman who has just visited the latter place is to be believed.

"Everywhere I went I saw the same condition of affairs, and every agent had the same tale—'nothing doing,'" he says. "In some of the largest houses business was at stagnation point, and even French machines seemed difficult to get rid of. A few Panhards were being sold, it is true, but then Panhards always sell well everywhere, so nothing can be judged from that. A very well known dealer told me that he was convinced the time was close at hand when a large number of the automobile dealers in London would have to put up their shuters.

"I went to London with the object of picking up a few ideas, but I got few. The only idea I did get was that the dealers in France had a good deal to be thankful for. While some of them may be in the same condition as the London houses, the majority can report excellent business, despite the lateness of the season."

Mahoning Will Make Air-Coolers.

At its annual meeting, held at Youngstown, Ohio, last week, the Mahoning Motor Car Co. elected the following officers:

President, L. E. Cochran; vice-president, W. J. Hitchcock; general manager and treasurer, W. P. Williamson; secretary, D. E. Webster.

The directors decided to build fifty cars, which will be ready for the trade next spring. The cars will be two and four passenger models, and will be equipped with a new air cooled cylinder invented by Charles T. Gaither. The machine has been tested the past few months and found to be entirely satisfactory.

To Build Steamers in Elyria.

The Hummell Engine and Mfg. Co. has been organized at Norwalk, Ohio, to engage in the manufacture of steam automobiles. The officers are as follows:

F. P. Hummell, of Bellevue, president; G. W. Driggs, of Elyria, first vice-president and superintendent; W. D. Daugherty, treasurer.

The new corncern will erect a factory at Elyria, and work on a large scale will be commenced next year.

Henley Heads for the Coast.

A. B. Henley, of the Electric Vehicle Co., has started on an extended tour of the trade of the Far West and Pacific Coast. He will call on the dealers of Denver, Ogden, San Francisco, Los Angeles, Portland, Tacoma, Seattle and other leading centres.

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AT HOME OR ABROAD—

Wherever Fisk Mechanically-Fastened Tires are Used,

THERE WILL BE FOUND CONTENTED CUSTOMERS
AND THE FISK'S BEST ADVERTISEMENT.



HERE'S ONE SPLENDID INSTANCE OF THE SORT.

Copy of letter from Messrs. Charles Jarrott & Letts, Limited, of 45, Great Marlborough Street, Regent Street, W., to the South British Trading Company, Limited, 13-15 Wilson Street, Firsbury, E C., dated November 12th, 1904.

We have no doubt you have read the various accounts in the press of the successful finish of the 3,000 mile tour of the two Oldsmobiles, one 7 horsepower and the other 9 horsepower. The test to which these cars were subjected, and which they have successfully withstood, is without question an excellent tribute to their good qualities.

In this connection we think it but just that we give the Fisk Detachable Tires, with which these two cars were fitted, their share of praise. They stood up splendidly, the same covers being used throughout the tour. The cars were driven over all conditions of roads and in the lengthy travels encountered very severe weather, and although they traveled over roads which were altogether unsuitable for motor traffic, being practically beds of loose flint, the tires on the large car had only one puncture in each of the hind tires. The front tires were not touched from the time they were fitted to the car, which has by this time done between 5,000 and 6,000 miles. The Fisk Tires have come through the ordeal better than we had dared hope.

THE FISK RUBBER COMPANY, - Chicopee Falls, Mass.

WESTERN SALES OFFICE: 52 STATE STREET, CHICAGO.

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NEW YORK,	CHICAGO,	ST. LOUIS,	LOS ANGELES,
SYRACUSE,	SAN FRANCISCO,	OMAHA,	LONDON.

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THE MOTOR WORLD

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☞ Those who are interested in motor vehicles will find the facilities and information of our office always at their command.

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NEW YORK, DECEMBER 1, 1904.

The Use of Searchlights.

The automobile manages to make many enemies in one way or another. Some of the causes of enmity are unavoidable, some are unreasonable; but some can be avoided.

The use of intensely bright headlights and searchlights is in the later category; such lights constitute a positive danger to people coming toward them. If they do not blind they frequently bewilder. It is almost necessary for the one approaching to come to a stop. This annoyance may be avoided, certainly in part. One user of a powerful searchlight makes a practice, when coming near another automobile or carriage, to throw his light far to one side or directly upward. This applies to the powerful searchlight only.

For the headlight there seems to be no way at present to mitigate the nuisance. It remains for some clever inventor to arrange a shutter of some sort that can be closed momentarily and opened from the seat.

Automobilists travelling between Boston and Worcester on the main trolley thoroughfare have noticed that many of the motormen are very considerate and draw a shade over their electric searchlights when they see automobiles or other vehicles approaching.

It has been the experience of some that one good sized searchlight will do all that a pair of headlights will do for all ordinary purposes. If the use of a searchlight becomes general in this way, then the mere turning aside will entirely remove the trouble.

Air Cooling and the Frenchmen.

It has more than once been charged against the French that they are unable to see beyond the ends of their noses; in other words, they believe that the sum of human endeavor, so far as it relates to the design or manufacture of automobiles, is found in French cars. These incorporate everything that is good or right; what is not found on them is unworthy of consideration.

This sunny belief received a rude shock several years ago when the French found that other peoples—notably the Germans—could produce cars equal, or superior, to their own. But the old belief still survives. It is evidenced in the French attitude toward air cooled engines. The French makers found, years ago, that when the horsepower got up to 3 or 3½ some artificial means of carrying off the excess heat became necessary, and they tried water cooling, and made it practicable. Since then they have water cooled all except small bicycle motors, and they cannot understand how anybody can have the face to contend that cars can be driven by air cooled engines. They have no patience with such claims. That they can scarcely believe that engines of this kind can run was shown by the attitude of the French "experts" at St. Louis who were called on to pass judgment on American cars driven by air cooled engines. It was with the utmost difficulty that they could be made to believe that they could actually run!

The same intolerance and incredulity crops up in an article by H. Andre in La France Automobile on cooling methods. "From the point at which the power of the motor exceeds 2½ or 3 horsepower cooling by air becomes insufficient, and it is absolutely necessary for the good working of the motor to cool by means of water," he says.

Facts and figures avail nothing in the face of this dictum. The motors of half a dozen years ago could not be effectually cooled by air after they got to be a certain size; ergo, nothing to-day over 8 horsepower can be cooled by air, declares M. Andre. What boots it that there are cars in this country ranging from 3½ to 16 horsepower—one, two and four cylinder—cooled entirely by air to say the eminent Frenchman nay? What matters that they run efficiently and reliably, year in and year out, indistinguishable from the water cooled kind as far as results are concerned? They are not within the line of French vision, consequently they are non-existent, a figment of the imaginative American brain.

The Ormond Carnival.

If some of the stuff that was printed last week is to be accepted at its face value, the Ormond Carnival is in a precarious state. Its success is not dependent on the magnificence of its everlasting beach, but is held in the hollow of the hand of the "unselfish" manager of the meeting, for it is gravely stated that because he dared advise the Florida East Coast Automobile Association to throw the events open to the whole wide world, without first consulting the manager, President Burgoyne has been discourteous to the point of offensiveness, and it is as gravely intimated that further ruffling of the managerial feathers will be resented by certain of his cronies who are employed by certain publications. It is well that man should stand by his friends, and when the particular man is in a position to supply "free grub, free bed, free everything," it may be twice as well to "stand by" with more than usual firmness.

But when any man or set of men would make it appear that such a now world important function as the Ormond Carnival reposes in the person of any one man, they become amusing. The fame of the Florida beach as a speed ground is secure for all time. Every effort to discover another course that will even begin to compare with it has failed, and so long as the Florida East Coast Association, or any other association, desires that contests of speed be held on the broad expanse it need not concern itself overmuch about men competent to manage them. The man responsible for the "discovery" of the beach and for the inception of the idea of such a carnival is deserving of every credit. "The man with an idea," whether it nets him a profit or whether it does not, is always welcome, but when he or his misguided cronies conceive him to be the "whole thing," and fancy that without him collapse must ensue, the danger point is reached.

Discourteous or otherwise, the best thing for the Ormond meeting that ever occurred

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was the action of the promoting association in rescinding the motion restricting entries and in asking the world to participate. The idea that the carnival was a one-man affair, and chiefly aimed to bring boarders to certain hotels at a period when boarders are not numerous, was rapidly gaining lodgement. It required action of some sort to lessen this impression, and that action was taken at exactly the right time and in exactly the right way. It was in the interest of the "fair field and no favor" that is at the bottom of true sport. An event of the sort is not one to be used as a vehicle to settle individual grudges, and before many days, if they be wise, the promoters will see the need for a managing committee rather than a lone manager who "uses" the carnival in very many more ways than one. "Unselfish" he may be, as his friends allege, but when it is common property that while in the guise of an intensely patriotic member, and apparently for "the good of the cause," he was enlisting as members of an automobile organization his friends and business acquaintances, and was at the same time working for his pocket and sharing the fees that his friends and acquaintances paid, there are those who wish to be saved from such "unselfishness." The laborer is worthy of his hire, but there is a difference between laborers, patriots and Hessians.

On Keeping Busy.

Some dealers find it difficult to keep themselves and their employes busy during the winter months. They look to the annual shows to divide the closed season into two nearly equal periods, the pre-show time being devoted to talking about and preparing for it, and the post-show time to booking orders and getting ready for the opening of the driving season. Of these two periods it is during the first that time hangs heavy.

There is another class of dealers that never finds the days too long, even when the roads are snow or slush covered and driving is as near to a standstill as it ever gets. Some of them, indeed, complain that the days pass too quickly and that they find occupation for every minute of the time in preparing to do business when the season arrives. First they set their household in order—make such changes as the past season has shown to be desirable. The salesroom, the repair shop, the garage—all receive attention, and whatever improvements or additions seem necessary or desirable are made now, instead of waiting until the spring rush begins.

Next the selling campaign is mapped out, gone over, criticised, amended and finally whipped into shape. The list of possible or probable customers is corrected and added to and a little missionary work done in some of the more promising cases. Old customers are hunted up and interviewed to see if they have any grievance or trouble; and if such is the case the matter is straightened out in the best possible manner. They are urged to bring in their cars to be overhauled, so they will be ready for the opening of the riding season, instead of waiting until the last minute.

To look after such matters as these is no small job, and the dealer who does it thoroughly will find that time does not hang heavy on his hands.

Salesrooms That Help Sales.

One very noticeable and extremely gratifying tendency of the times is the trend toward exclusive salesrooms and away from the combined salesroom, garage and repair shop. It has been for some time evident that if the automobile business is to remain on a high plane some change must take place, and it has begun none too soon.

The people who make up the greater part of the clientele of automobile dealers take notice of their surroundings and are impressed, favorably or otherwise according to whether they are pleasant or unpleasant. In the past they have been disposed to overlook or condone shortcomings owing to their interest in the automobile and everything that has to do with it. But that time is passing, and in no great while it will be required that all places where automobiles are sold shall be clean and sweet-smelling, if not handsome and attractive as well.

There is really no reason why salesrooms should not be, as they are in a number of cases, entirely divorced from the garage and repair shop. While desirable, it is not even necessary that the latter should be in the same building. Salesrooms on prominent streets, where retailing is done on a large scale, are frequently much easier to obtain, and at a much lower rental, than quarters large enough to accommodate the entire business of an enterprising and progressive dealer. A plate glass front and floor space enough to accommodate two or three cars, chairs, divans, etc., and an office, are sufficient. Then the esthetic side of the business is alone presented, and no unpleasant reminders of accidents and break downs are held up before the prospective purchaser. There are times when this is a decided advantage, as those who have tried it know. But it is an absolute essential that the salesroom idea should be strictly adhered to; any slackness, such as temporarily disposing a demonstrating car there, or of making even trivial repairs, or permitting workmen or chauffeurs to congregate in the salesroom, proves fatal to the scheme.

The garage and repair shop can be maintained in the rear or on a nearby side street. Even if it has to be located at a distance no great harm is done, for the automobile's mobility bridges distance and makes it feasible to receive and ship without undue delay. Plenty of room is a requisite of an establishment of the kind, and the lack of it costs more than is represented by a little extra rent.

Tires in Winter.

It is popularly supposed that the winter driving is harder on tires than that of any other season of the year. Frozen roads, which are frequently covered with jagged pieces of ice, are assumed to cut and puncture tires and inflict a great deal of damage on them.

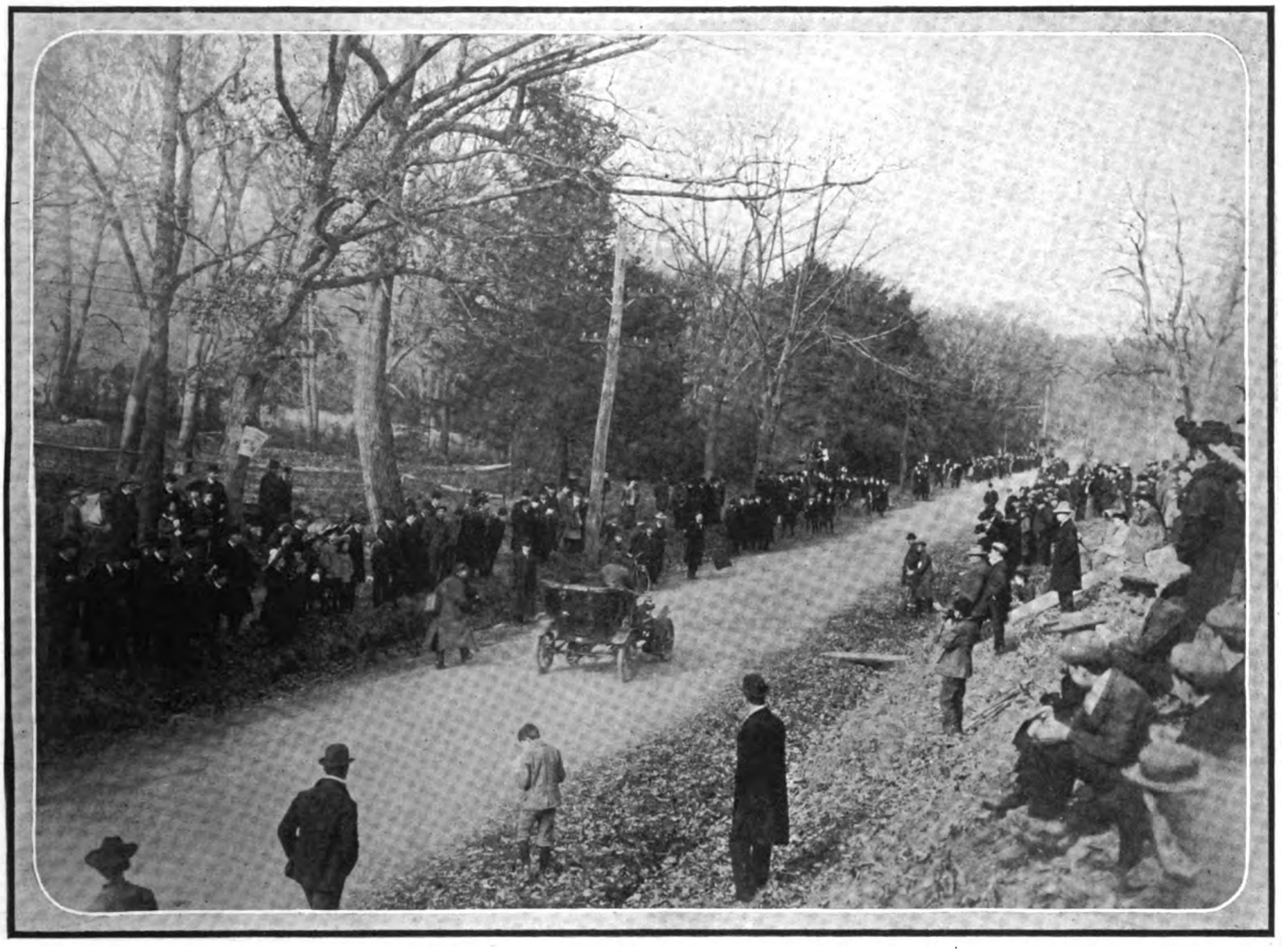
The belief is directly contradicted by some motorists who have given the subject attention. They say that it is the summer driving that is hardest on tires; that dry, dusty roads do the greatest damage to them. This is particularly true, they claim, in the case of macadam or other stone roads. The dry weather loosens the top dressing and leaves exposed a multitude of sharp stones, with jagged edges, and these cut the tires, puncture them and predispose them to boils, bursts, etc.

This view is, as stated, quite at variance with the prevailing belief. It also conflicts to some extent with the known fact that a wet tire is more susceptible to puncture or cutting than a dry one. To prove this it only needs to take a piece of rubber and see how much easier it is to cut when wet than when dry.

Motor Age remarks that after December 15 Secretary Gillette, of the A. A. A., will be overwhelmed with belated entries for the Bennett Cup race. It is just as well to bear in mind that the Automobile Club of America still has the bossing of the American end of this race, and if there are any belated entries they will find their way to Secretary Butler's hands. The A. C. A. is not going to let go of a good thing like the cup race until it has to and that it is competent to cope with the task is not to be gainsaid.

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Up Eagle Rock—Greatest of American Hill-Climbing Contests.

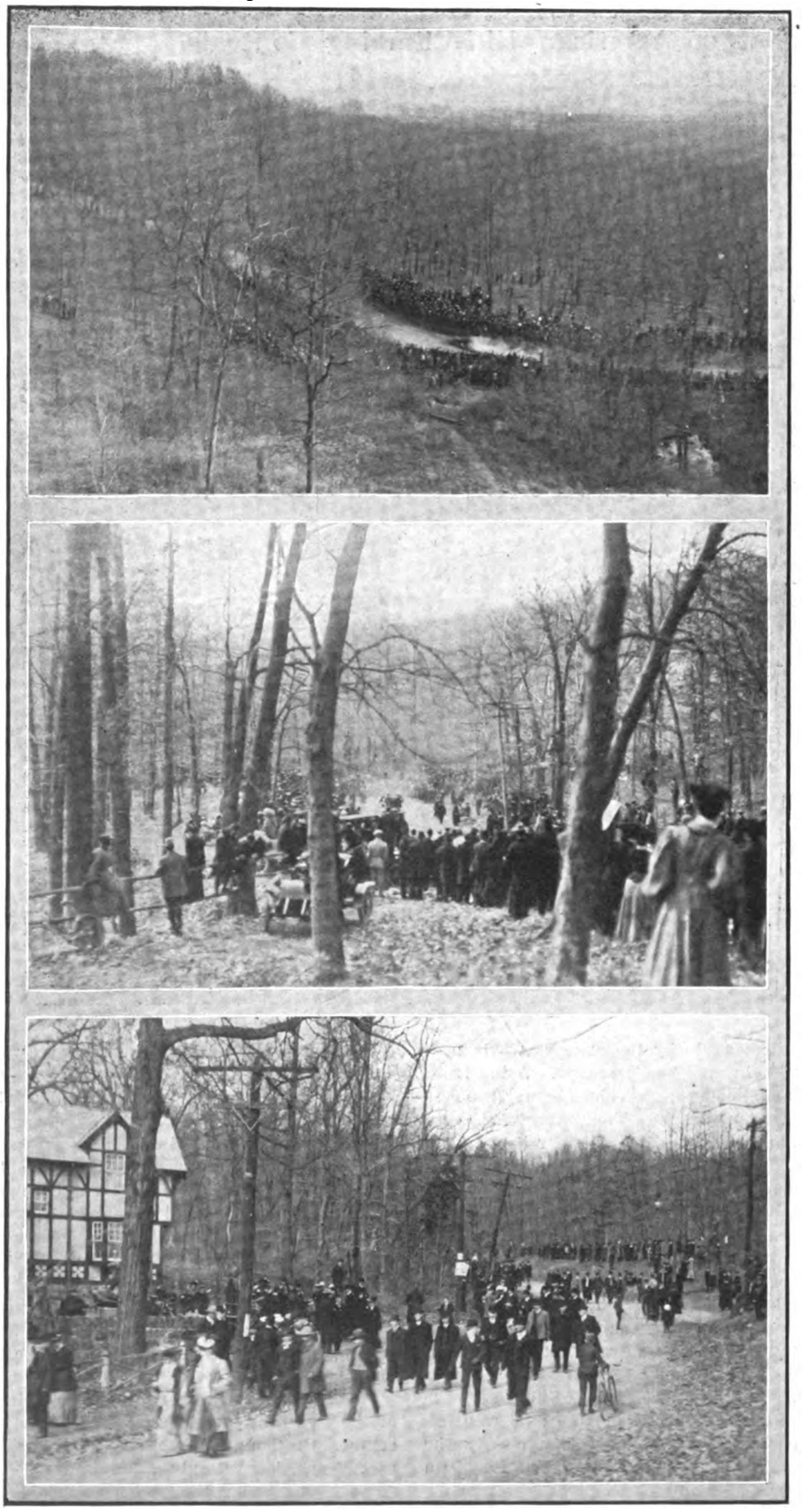


In the presence of an enormous concourse of spectators, variously estimated at from 10,000 to 20,000, all previous hill climbing contests in this country were cast in the shade on Thanksgiving Day, at Eagle Rock, near Newark, N. J. It was the fourth annual contest held on the historic course, and new records of all kinds were marked up, some of which are likely to maintain their places for a long time. The promoting organization, the Automobile Club of New Jersey, showed itself to have a fine grasp of the situation, and, in conjunction with its officials, ably conducted the affairs and ran the long list of events off with such celerity that at a little after one o'clock the last trial had been completed and the participants and remaining spectators dispersed in ample time to partake of their Thanksgiving turkey.

The contest was a notable one in a number of respects. The most popular man on the course, the man whom of all others the immense crowd went to see, the hero of the 1903 contest, "Willie" K. Vanderbilt, Jr., went down to defeat at the hands of a daring and skillful professional driver; a defeat that was doubly harrowing because the premier position was lost, then regained, and finally lost again by the exasperatingly narrow margin of 3-5 of a second. Aside from this, and the keen and close competition of the octette of big cars, the feature of the day was the wholesale smashing of records. This was of such consistent character that when the finale was reached new figures had been marked up in ten of the eleven events; even the steam record for the course, which had stood since 1902, was obliterated, the new figures being scarcely more than one-half as much as the old ones. The single class to escape was that for cars costing between $1,250 and $2,000, and even that was beaten, strangely enough, by the cars in a cheaper class. With the exception of this and the class for cars under $850, the cuts were all big ones, and represent pretty closely the limit of speed possibilities on this hill. In a number of events, too, there was a remarkable fluctuation in the performances of cars of the same class, and, consequently, of nearly the same rated power. This was most noticeable in two classes—those for cars costing between $850 and $1,250, and between $3,000 and $5,000. In the first mentioned class the variance was between 2.18 2-5 for the fastest and 5.25 1-5 for the slowest car, and in the other class the figures were 1.54 2-5 and 4.29 1-5 for the fastest and slowest cars, respectively. Ability to tak the hill, or the greatest part of it, on a high speed, undoubtedly had much to do with these diverse performances, as well as skillful driving; but even allowing for these, there is indicated an abnormal difference between rated and developed horsepower.

That the fastest time of the day—the 1.20 flat of M. G. Bernin in W. G. Brokaw's 60 horsepower Renault—is almost, if not quite, as fast as can be made on the mile long hill, with its average grade of 12 per cent. and its maximum of 19 per cent., seemed perfectly clear to those who stood at either of the two nearly right angled turns on the course. On them, and more especially on the second one, located only a few hundred feet from the finish line, the issue was staked and the battle won or lost. To them almost wholly was due the fact that 50 miles an hour was the fastest time that the best product of foreign or domestic factories could average, as against the 77 miles an hour accomplished on the celebrated Gaillon Hill in France. The latter is one kilometre long, with a grade varying from 7 to 10 per cent.;

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THREE VIEWS OF THE CROWD.

it is perfectly straight, with a smooth, hard surface. The phenomenal speed of 77 miles an hour is due to these conditions, and could not possibly be duplicated on Eagle Rock hill. On the latter the grade is considerably steeper, the surface much poorer and there are two exceedingly bad turns. On the straight stretches the big cars last Thursday were driven at tremendous speed—just as fast, in fact, as was possible without overrunning the turns. On the latter the clutches had to be thrown out to reduce speed sufficiently to enable them to get 'round at all; and on the upper turn it was necessary to come almost to a full stop in order to keep from going into the ditch on the outside. Here a combination of skill and nerve was a requisite, and it was at this point that Bernin overmastered Vanderbilt and won the day by going around in grand style; although it is only justice to the young millionaire to mention that at the foot of the hill, in his 1.20 3-5 trial, he had to slacken to avoid running into a man in the road. Had it not been for this the result might have been reversed, in spite of Bernin's superiority on the turn.

The day broke with mist and fog obscuring the sun, but notwithstanding the Weather Bureau's prognostication of rain, everything pointed to a dispersal of the clouds and a triumph of Old Sol. Thus it turned out, and by 11 o'clock a glorious Indian summer day was in full flood, in place of the crisp, frosty, blood tingling, typically November day that many had looked to succeed the morning's mist. In part the ideal day was responsible for the enormous outpouring of spectators.

Almost dwarfed as the automobile contingent was by the mass of pedestrians, it was still a large and notable one. It was among the early arrivals. Only a few came after 11 o'clock, and these were mostly from New York and other comparatively distant points. To the casual observer the number of cars did not seem large; not as large, for example, as the gatherings at the Empire City track on race days, nor as large as the number of motorists at the foot of the hill and scattered along the course indicated. This was due chiefly to the fact that there was no general "parking" point. The cars were all driven to the foot of the hill, where most of them discharged their passengers, and then the question of disposal came up. Soon there was a congestion of cars at the starting point, and it became difficult for arriving ones to push through them. The hill itself was kept commendably clear of cars, so there was no relief there. The only thing left was to drive the cars to the edges of the crowd, and this pushed the newcomers further away from the foot of the hill, so that many cars were entirely out of sight, occupying all the roads within a radius of a quarter of a mile.

The cars were of all types. There were big touring cars, foreign and domestic, loaded to their full capacity with motorists in ultra costumes, and little runabouts, with here and there a relic of the dark ages in the shape of a "dinky" steamer that seemed as if it had been resuscitated for the day only. But the palm for numbers was borne by the tonneau car of moderate size and power, carrying four persons. It was seen everywhere, manoeuvering for a choice position or being driven to the outskirts of the crowd.

The arrangements for handling the crowd were simple and perfect as far as they went. No one expected such an outpouring of people, consequently no atempt was made to cope with it; and, short of an army of police,

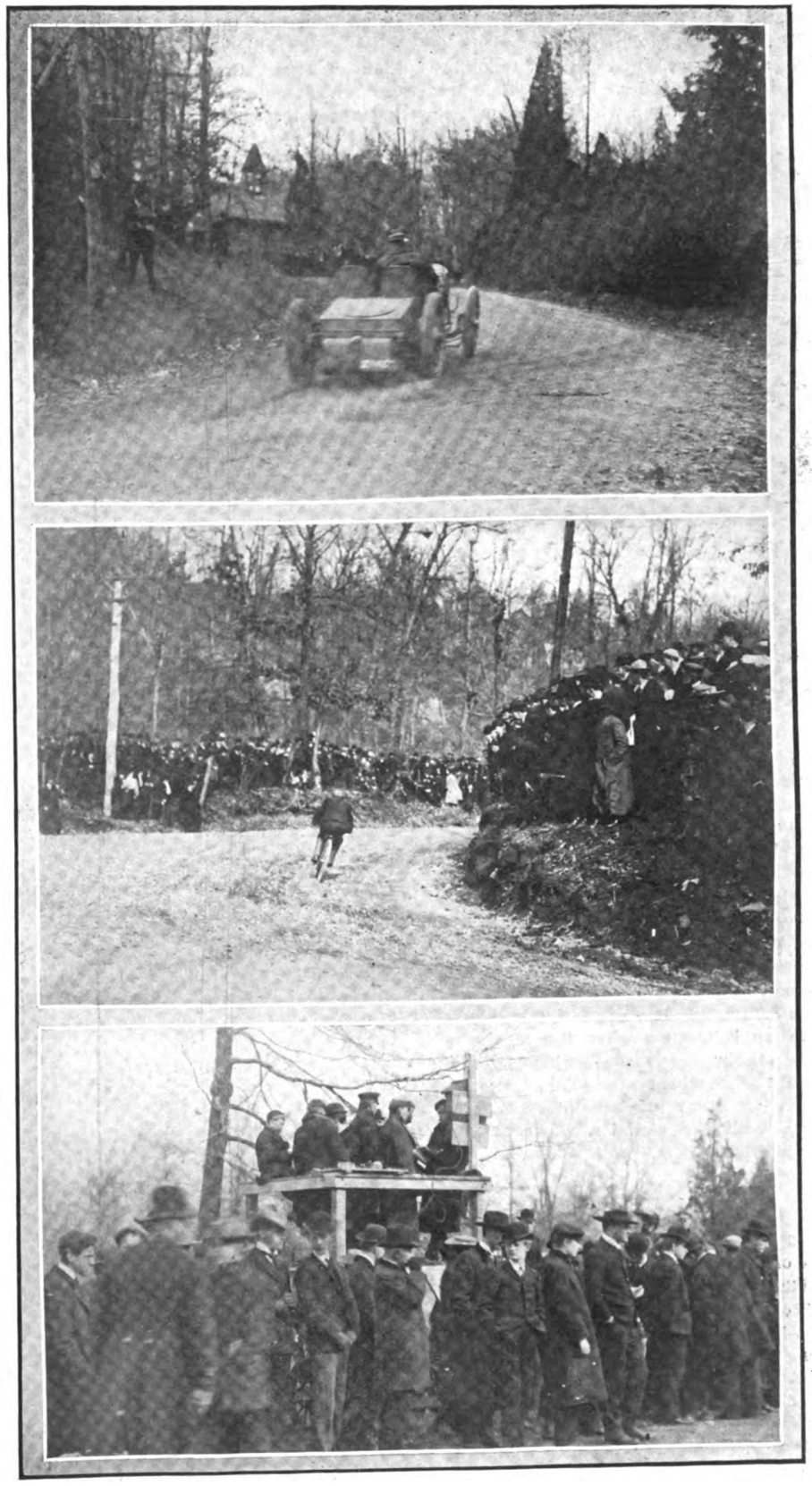
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none could have been made. There were perhaps a dozen of the West Orange police, most of them at the foot of the hill; outside of these, there was a corps of hard working officials at the start and finish and distributed along the course. Most useful of these was the gallant band of megaphoners and signalmen. The starting of a car was announced by them, and the vocal and visual tokens passed along from bottom to top of hill; the men were in sight of and in touch with each other and no car reached any point unheralded. The celerity with which the crowd scattered and sought vantage points at the sides of the road was remarkable, although many of them waited until they saw the car actually approaching before moving. To this quickness was due the entire absence of casualties, one dog alone excepted, which was sent to canine heaven with astonishing quickness.

The course was, as stated, in the worst condition since the contests were begun in 1901. The straight stretches were fairly good, but the two turns were bad to begin with and became much worse before the day was over. The speeding cars hugged the inside of the road closely and wore the roadbed into ruts and loosened the stones and scattered them in reckless fashion clear across the road, until the latter looked as if a train of traction engines had passed over it.

This was the more surprising, in view of the fact that elaborate repairs had been undertaken for a week or more before the day of the contest. The West Orange authorities had taken charge of the matter, and the Automobile Club of New Jersey was to foot the bill. When a couple of days before a bill for $247 for road repairs and $51 for policing the course was presented, things looked stormy for a few minutes. The authorities "stood pat," however, stating that it was "no money, no race," and the amount was finally paid over. Coupled with the bill was a demand for a $5,000 indemnity bond, accompanied by the same ultimatum. For a while this seemed a poser, but a bond from a surety company, indemnifying the town against damage caused by the participants in the race, was finally presented by the club, and after a long wrangle it was accepted.

The smashing of records began when the first car, an electric, was sent off at about 9:15, and the slaughter did not end until the contest was brought to a close more than four hours later. That the electric record of the year previous would go was considered likely, and so it proved. It was cut by more than two minutes—from 6:38¼ to 4:22 3-5. The steam car record of 2:42, standing since 1902, then came in for a buffeting, both at the hands of Webb Jay, in a stock 15 horsepower White car stripped for racing, and, earlier in the day, by E. J. Foley, in a 7½ horsepower Prescott. The latter's time was 1:52 2-5, while Jay elicited applause along the line by gliding up the hill swiftly and without a sound in 1:28 2-5. Later, in the heavy car class, Jay bettered this performance, covering the course in 1:22 3-5, the fifth best time of the day and ahead of 60 and 70 horsepower cars in the same class. It was the general impression that Jay was driving a special racing car, so swift was its flight up the hill, but such was not the case. It was a 1905 stock model, as far as the engine, generator, running gear, etc., are concerned.

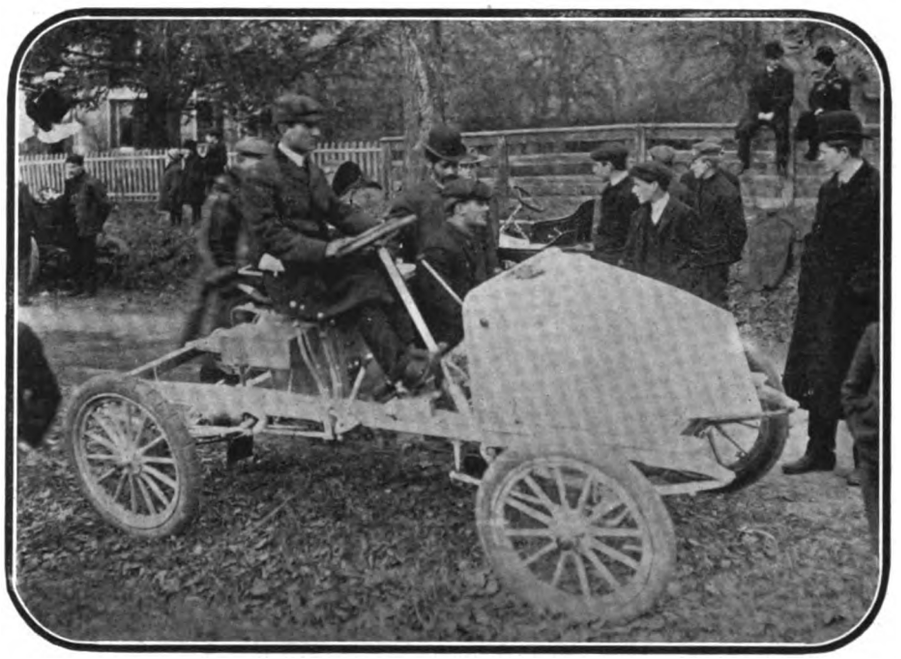


VANDERBILT SLEWING AROUND THE LAST TURN.
THE SHARP TURN HALF WAY UP.
THE OFFICIAL STAND.

In the class for cars between $850 and

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$1,250, the new Buick car, driven by H. J. Koehler, the Newark (N. J.) dealer, made its initial appearance, and in a twinkling stamped itself a wonder. It carried off first honors in its class by a wide margin, cutting



WEBB JAY IN THE WONDERFUL WHITE.

started forward, then disappeared over the brow of the hill. In quick succession the Fiats of Frank Croker and of E. Cedrino made the ascent, and then a chorus of cheers announced the coming of W. K. Vanderbilt,



THE OBSERVED OF ALL OBSERVERS.

the record from 4:13½ to 2:18 2-5. The clean-cut and businesslike appearance of the car and its quiet running caused much favorable comment. The new 40 horsepower Thomas, driven by M. H. Roberts, showed that its work at Waverley on the preceding Saturday was no fluke by cutting the record in the $2,000 to $3,000 class from 3:46 to 2:42.

In view of the large number of entries—fifty-one in all—the start of the contest was set for 8:30 a. m. It was nearly three-quarters of an hour later when the McMurtry electric timing apparatus, which worked perfectly throughout the day, recorded the getting away of the first car. Beginning with the electrics, steamers and small gasolene cars, and following the plan of last year by dividing the competitors into classes according to motive power and price, a good start was made, and by 10:30 the ground was cleared for the departure of the cars in Class 8—those listing at more than $5,000. Good and fast work as had been done by the previous competitors, it was the big cars that the crowd had been waiting for, and when Sartori, in A. G. Vanderbilt's 90 horsepower Fiat, dashed up the hill at a tremendous pace the first pronounced enthusiasm was shown. He got around the first turn in good shape, but nearly came to grief on the still sharper one near the top of the hill. Steering close to the inner side of the road, he withdrew his clutch and brought his front wheels around. They acted as a pivot, while the rear ones slewed around at a tremendous rate and brought the car almost straight across the road. Just at the right moment Sartori engaged his clutch and bringing up at a hedge at the side of the road. William Wallace, of Boston, came next, and at this point rolled his right front tire off; but as through an error his time was not taken he was given another trial. This proved fortunate for him, for in his second run he beat Sartori's time, 1:24 1-5, which was up to then the fastest, by two-fifths of a second, his time being 1:23 4-5. Vanderbilt's time was 1:26 3-5. Bernin did not compete in this class.

jr. He took the bad turn wide, only to repeat Sartori's performance, the rear wheels of his car slewing into the ditch and



H. J. KOEHLER IN THE NEW BUICK CAR THAT MADE A SENSATIONAL "DEBUT."

All the big cars were billed for a second appearance in the heavy car class. All the drivers had become better acquainted with the course, and were thereby enabled to bet-

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ter their times materially. As the White steamer, although barred from the "over $5,000" class owing to its list of $2,500, was eligible to the heavy car class, it competed and succeeded in surpassing all the times made in the "over $5,000" class; and it was beaten only by four racing cars costing six or eight times as much.

Before the heavy class could be run off, however, it became necessary to wait until a comparatively clear road could be obtained. It was almost 12 o'clock, and the crowd seemed to be reminded of its Thanksgiving dinner at one and the same moment. Thereupon a hegira began that swept the officials off their feet and stopped the contest for nearly three-quarters of an hour. From foot to summit the hill was one mass of slowly moving humanity, through which no car could have made its way. It was only when about three-quarters of the spectators had left the hill that the contest was resumed.

Although Bernin had not yet competed, he made the cleanest and most expeditious ascent of the day, going at marvellous speed and taking the turns with rare skill, his run being clocked at 1:20 flat. W. K. Vanderbilt, jr., could only do 1:20 3-5, while Wallace bettered his own time to the extent of 1 4-5 seconds. Sartori came next, only one-fifth of a second behind Wallace, and was hard pressed by Webb Jay, two-fifths of a second later.

In the 1903 contest there were thirty-six entrants, and premier honors went to W. K. Vanderbilt, jr. It is interesting to recall that on that occasion he drove a 30 horsepower racing Mors, and his time was 1:36¾. This year his car was a 90 horsepower Mercedes, and his best time was 1:20 3-5.

Although no motorcycle events were scheduled, three time trials were made with two wheeled machines, all of them being officially timed by the McMurtry electric device. The first trial was made by P. H. Johnson, of Newark, N. J., who ascended the hill on an Indian motor-bicycle in 1:59 4-5. Oscar Hedstrom, Springfield, Mass., made two trials with a double cylinder Indian. He fell the first time, and the second covered the course in 1:41.

The summaries:

EVENT NO. 1—ELECTRIC VEHICLES, STOCK MACHINES.

Driver.	Car.	Time. M. S.
J. W. Aylesworth	3 h. p. Torbensen	4:22 3-5
H. W. Ewbank	Columbia	5:23 2-5

EVENT NO. 2—STEAM VEHICLES, STOCK CARS.

Webb Jay	15 h. p.	White	1:26 2-5
E. J. Foley	7½ h. p.	Prescott	1:52 2-5
Edwin Shuttleworth	10 h. p.	Stanley	4:27 3-5

EVENT NO. 3—GASOLENE CARS, VALUED AT LESS THAN $850—STOCK MACHINES.

George Paddock	3 h. p.	Oldsmobile	3:06 1-5
C. C. Henry	3¼ h. p.	Cadillac	4:33 2-5

EVENT NO. 4—GASOLENE VEHICLES, VALUED BETWEEN $850 AND $1,250—STOCK MACHINES.

H. J. Koehler	22 h. p.	Buick	2:18 2-5
C. A. Kohl	12 h. p.	Duryea	2:33 2-5
H. L. Newton	15 h. p.	Elmore	2:41 4-5
H. B. Patton	15 h. p.	Elmore	2:45 3-5
A. F. Robinson	15 h. p.	Buckmobile	3:32 1-5
W. H. Bex	10 h. p.	Franklin	4:08 3-5
V. Torbensen	12 h. p.	Torbensen	4:25 4-5
Arthur Gardner	16 h. p.	Rambler	5:25 1-5

EVENT NO. 5—GASOLENE VEHICLES, VALUED AT FROM $1,250 TO $2,000—STOCK MACHINES.

H. W. Alden	14 h. p.	Columbia	3:14 2-5
Arthur Gardner	16 h. p.	Rambler	4:13 2-5
W. H. Bex	10 h. p.	Franklin	5:03 1-5

EVENT NO. 6—GASOLENE VEHICLES, VALUED AT FROM $2,000 TO $3,000—STOCK MACHINES.

M. H. Roberts	40 h. p.	Thomas	2:42 4-5

EVENT NO. 7—GASOLENE VEHICLES, VALUED AT FROM $3,000 TO $5,000—STOCK MACHINES.

W. Walter	24-30 h. p.	Waltercar	1:54 2-5
R. E. Fulton	24 h. p.	Pope-Toledo	2:15 4-5
C. R. Greuter	24 h. p.	Matheson	2:21 4-5
H. Sendall	30-35 h. p.	Columbia	2:53 4-5
D. B. Gray	24 h. p.	Speedway	4:09 3-5
S. T. Stinzing	30 h. p.	Desberon	4:29 1-5

EVENT NO. 8—GASOLENE VEHICLES, VALUED AT MORE THAN $5,000—STOCK MACHINES.

William Wallace	90 h. p.	F. I. A. T.	1:23 4-5
Paul Sartori	90 h. p.	F. I. A. T.	1:24 1-5
E. Cedrino	60 h. p.	F. I. A. T.	1:24 4-5
W. K. Vanderbilt, Jr.	90-105 h. p.	Mercedes	1:26 3-5
F. H. Croker	75 h. p.	Simplex	1:29 2-5
G. H. Flinn	60 h. p.	Mercedes	1:38 1-5
J. L. Breese	40 h. p.	Mercedes	1:43 3-5

EVENT NO. 9—CARS WEIGHING FROM 1,432 TO 2,204 POUNDS.

M. G. Bernin	60 h. p.	Renault	1:20
W. K. Vanderbilt, Jr.	95-105 h. p.	Mercedes	1:20 3-5
William Wallace	90 h. p.	F. I. A. T.	1:22
Paul Sartori	90 h. p.	F. I. A. T.	1:22 1-5
Webb Jay	15 h. p.	White	1:22 3-5
E. Cedrino	60 h. p.	F. I. A. T.	1:29 1-5
F. H. Croker	75 h. p.	Simplex	1:32 2-5
George H. Flinn	60 h. p.	Mercedes	1:33 1-5
J. L. Breese	40 h. p.	Mercedes	1:39 3-5
C. W. Hunter	24 h. p.	Pope-Toledo	1:43 3-5
S. T. Stinzing	30 h. p.	Desberon	2:09 4-5

EVENT NO. 10—CARS WEIGHING FROM 851 TO 1,432 POUNDS.

Guy Vaughn	40 h. p.	Decauville	1:37 1-5
E. J. Foley	7½ h. p.	Prescott	1:37 3-5
Webb Jay	15 h. p.	White	1:48

EVENT NO. 11—CARS WEIGHING FROM 551 TO 851 POUNDS.

W. F. Winchester	12 h. p.	Franklin	2:26
F. F. Cameron	10 h. p.	Cameron	3:07 1-5

At the close of the contest Harlan W. Whipple, president of the American Automobile Association, tendered his customary dinner to nearly one hundred guests at the Orange Club. As usual on these festive occasions, mirth and jollity abounded, those present giving themselves up to an abandonment of good humor. Lively sallies of wit were exchanged after the viands had been discussed and the speechmaking begun, and were productive of keen enjoyment.

A notable guest was Inspector Smith of the New York Police Department, who, when called on for a speech, gave an address that for soundness and sensibleness could not be surpassed. He declared that the police officials were not opposed to automobiles, and that if it were not for the reckless and inconsiderate minority of motorists there would be no trouble and no friction.

To J. A. Hill fell the task of making the presentation speech on behalf of friends of Winthrop E. Scarritt, who had given him a new 1905 White steam car, which he had given its initial run that day. He declared with a perfectly straight face that, to his knowledge, Mr. Scarritt had owned nineteen automobiles and had never ridden nineteen consecutive miles on any one of them; that he did not know how to make the smallest repair to a car, but that he was now taking lessons at the Y. M. C. A. school in this city in the hope of qualifying himself. William Wallace made himself very popular by singing a many versed ballad entitled "How Would You Like To Go Halves on That?" the verse on Lydia Pinkham being the hit of the song.

Houston Has a Rousing Meet.

What was said to be the greatest number of spectators ever inside the gates witnessed the races at the driving park in Houston, Tex., on November 23. Colonel E. H. R. Green, of Dallas, went to the meet with three machines in a special car, and took away with him two silver cups for winning two of the events. The race for cars of 20 horsepower and over was the most exciting contest of the day, Colonel Green's Pope-Toledo defeating Howard Hughes, in a Peerless, and Percy Pierce, in a Pierce Great Arrow. Summaries:

Three miles, for local cars of 8 horsepower and under—Won by W. A. Burkett (Oldsmobile); C. Bender, jr. (Oldsmobile), second; James Bering (Cadillac), third. Time, 5:23.

Three-mile novelty race—Won by Dr. J. R. Stuart (Winton); Dr. W. R. Eckhardt, second. Time, 13:45.

Two miles, for motor bicycles—Won by Lewis Birdsong (Orient); J. Wade Cox (Thomas Auto-Bi), second. Time, 4:34¾.

Three miles, for cars having less than four cylinders and not more than 10 horsepower—Won by G. W. Hawkins (Oldsmobile); Seymour Hanford (Oldsmobile), second; S. E. Bering (Cadillac), third. Time, 5:49.

Five miles, for cars of 20 horsepower and under—Won by E. H. R. Green (Franklin); S. H. Boren (Franklin), second; Dr. J. R. Stuart (Winton), third. Time, 8:14 1-5.

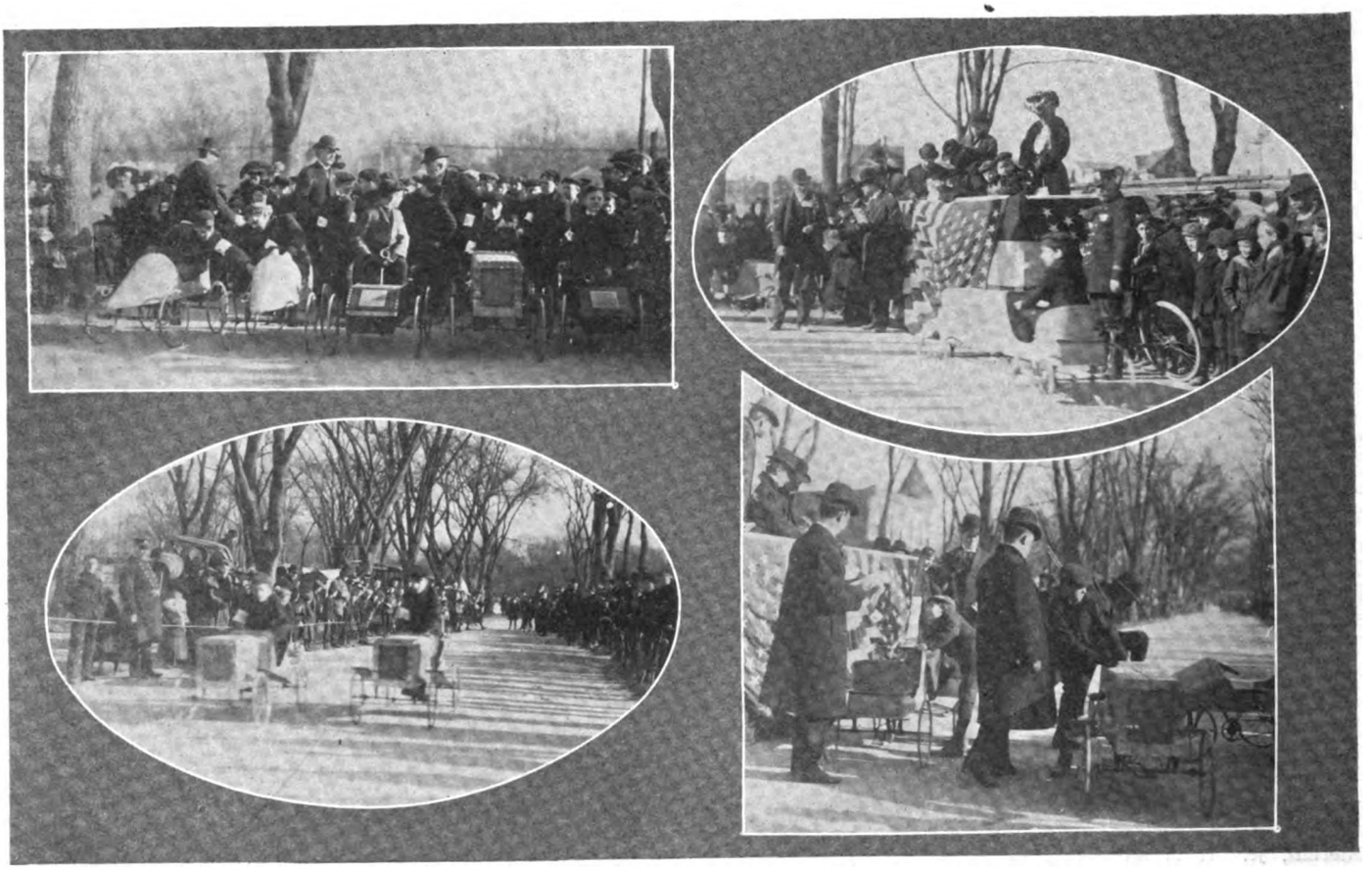
Five miles, for cars of 20 horsepower and over—Won by E. H. R. Green (Pope-Toledo); Howard Hughes (Peerless), second; Percy Pierce (Pierce Great Arrow), third. Time, 7:32 2-5.

Slow Going at Baltimore.

The races at Electric Park, Baltimore, on Thanksgiving Day, were witnessed by about two thousand spectators, but were spoiled by the condition of the track. A snowstorm two weeks previous had caused the supports of the electric lights to break, and pieces of the light globes were scattered all around the track. The most interesting event of the afternoon was the three-mile contest for touring cars, which was won by Thomas Goodwin, in a 40 horsepower Thomas. He got a poor start, but overtook Stanley Zell's 20 horsepower Winton in the last half mile and won in 6:08. The heat race, at two miles, for machines costing less than $1,000, was won by Graham Hall in straight heats. Edmund Buchanan was second in both heats, being the only other starter in the second heat. Hall's time in the first heat was 4:20; in the second heat, 4:21. H. J. Painter, of California, won the unlimited Australian pursuit race for motorcyclists in 7:34, the distance covered being four and one-third miles. His only opponent was Ray Thomas, of Baltimore.

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Brooklyn's One-Boy Power Automobile Race.



"Soap Box" Beats "Grey Devils" and Others.

Saturday last was a great day for the small boy of Brooklyn, N. Y. Some two hundred of him "motored," as few of them ever had "motored" before, that is, in toy "automobiles," the kind propelled by pedals and fitted with miniature "automobile bodies." The race was inspired by a similar event in Paris and was promoted by a Brooklyn department store. The contest was run on the Coney Island cycle path and attracted an interested and interesting crowd.

As toy "automobiles," in value $50, $22 and $12 were provided by the promoters as prizes, and as they charged no entrance fee and also supplied the necessary "cars," things were easy for the youngsters, who flocked to the scene in great numbers; every mother's son of them was accompanied by his mother and brothers and sisters and all the other brothers and sisters of his particular neighborhood.

The race was run in heats of five each, the final of which will be run on Saturday next. There were thirty-nine of the trial heats run and, sad to tell,. none of the highly ornamental "Grey Devils" and "Roaring Lions" turned out by proud manufacturers, won the premier honors. Instead, ingenious little "Johnnie" McKenna, whose "car" was constructed of a soapbox and the wheels and other parts of an old bicycle, ran away from all the rest of the struggling contenders. Whether or no he will be able to "make good" on Saturday next remains to be seen. McKenna pedalled over the one hundred yards in twenty-five seconds. His nearest competitor was 12-5 seconds behind him.

St. Louis Tackles Chauffeur Problem.

The St. Louis Automobile Club has attacked the chauffeur problem and settled it to its own satisfaction, at least.

At a recent meeting of the board of directors it was decided to issue chauffeur certificates. These will be granted to the different drivers of the city after a thorough examination by a board appointed for that purpose by the club. A technical knowledge of the machine will be required, as well as other qualifications, such as character, physical requirements and other general conditions. These certificates are authentic only so far as the local club is concerned, and will be the driver's recommendation to any member of the club. The certificate reads as follows:

"This is to certify that John Smith has been examined by a committee of the club, and that he is duly qualified to act as an operator. His personal habits and character are good."

The certificate will be signed by the president of the club and the committee.

Why He Refused a Second Ride.

While an appetite for speed may be worked up gradually, and often is, a too large dose of speed during a first ride in an automobile is frequently the means of arousing a prejudice against motor driven vehicles which is hard to overcome. An instance of this was encountered recently when a man who is much given to hunting and shooting was heard to say that he did not like automobiles. He did not appear to be a very timid sort of a person either, as he is more than six feet tall and weighs more than 200 pounds.

"One experience in an automobile was enough for me," he said, when asked why he disliked automobiles. "A lot of us were out in New Jersey recently shooting at clay pigeons, and when it came time for the party to go home a physician volunteered to take me to the train in his automobile. I had never been in one and so accepted the offer. We had about five miles to go from the gun club grounds to his house, from which it was only a short distance to the railroad station. He drove that machine to his house as if he had been sent for. We grazed a dozen or more farmers' wagons and I thought the machine would be wrecked long before we reached the physician's house. It seemed to me as if he were driving it just as fast as he possibly could, and I hung onto the seat, expecting to be thrown on my head every minute. We had lunch at the physician's house and after we had finished he told me to get ready and he would drive me to the station, but I thanked him and told him that I would much rather walk, which I did. I do not want any more automobile rides in mine."

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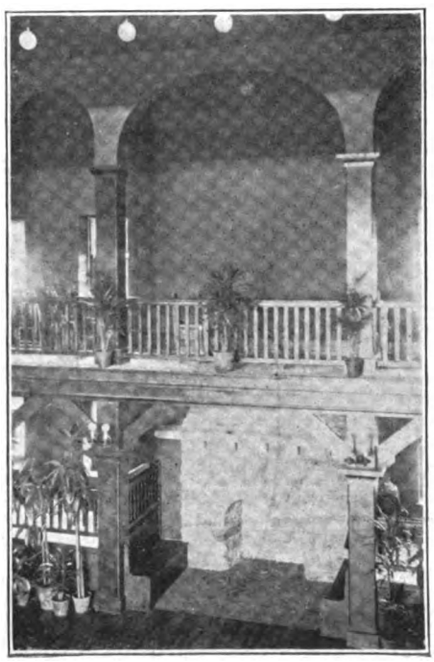
America's First Specially Designed Automobile Club House.



NEW BUILDING OF THE GERMANTOWN AUTOMOBILE CLUB.

The Automobile Club of Germantown, historic suburb of Philadelphia, enjoys the distinction of having the first house of any club in this country which was designed and built exclusively for the purpose. The clubhouse, which was officially "warmed" last week, is situated at Carpenter Station on the Pennsylvania Railroad, in a commanding position overlooking the country for miles around, and located so closely to the line of a railroad leading into the centre of the city, it has all the advantages of a central position in the city while also enjoying the prodigality of space which could be only secured in the country or suburbs. The structure is a low, rambling one, the main portion of which is 45 by 65 feet, with an annex 20 by 35, which is designed for the accommodation of the caretakers of the house. The building is two stories in height and has a sloping roof with great, overhanging eaves, which give it a very characteristic and inviting appearance, which is enhanced by the wide porch extending the breadth of the house; the pillars employed are of very massive proportions.

One of the places of prime interest is the garage, which is, of course, located in the basement with an entrance at the side of the building. This is the only entrance to this part of the building, there being no connection with the other part of the house through the interior. This provision is to prevent the odors and noises of the garage from finding their way to the rooms devoted to social purposes. Here there are accommodations for twenty cars, and the entire capacity of the place has been taken by the members already, although it was not expected that the place would be filled for some time yet. Already there is some talk of enlarging the garage and further increasing the accommodations by opening another doorway at the opposite end so that any of the cars may be run out or in without disturbing any of the others. There are closets for each of the members, storage for lubricating oil, machine shop, washing stand and repair pit.



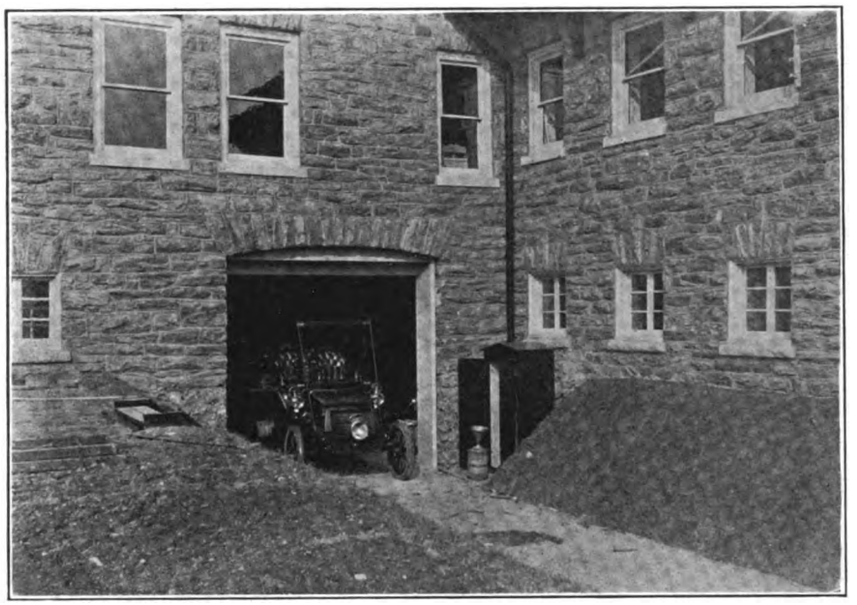
FIRE PLACE IN FOYER.

Two excellent precautions are taken with a view of reducing to a minimum the danger of fire. The gasolene tank is buried in the ground at a distance of forty feet from the house, although the fuel is delivered right at the garage entrance by means of a pump. Another feature of safety is that there is no fire at any time in the house. The building is heated by steam, which is generated outside and carried underground by means of pipes. A special ventilating system has been devised for the garage, by means of which all the fumes are carried off through the chimney, the air being kept in motion by electric fans.

As one enters the main doorway he finds

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himself in a great hall or foyer, which is used for a ball room on social occasions and at other times, by the erection of screens, it is made to answer the purposes of reading and lounging rooms. This hall runs through the centre of the house to the roof with a Moorish arrangement of arches extending around on both the first and second floors. The woodwork is of a deep brown color, and the other furnishings are of dark red,



GARAGE ENTRANCE, GERMANTOWN AUTOMOBILE CLUB.

and the effect of this combination is very rich. On the first floor there are a number of small rooms designed for the use of the ladies of the members' families, who will always be made welcome, although there is no provision for women membership of any character. On the second floor there are bachelor's quarters for four men, a billiard room and rooms for other purposes, such as card parties and small dinner parties.

The club has inaugurated a scheme of disposing of supplies to the members which will result in profit to them as well as the organization. Tires of all kinds, gasolene, lubrication oil, and all similar articles which are constantly demanded, will be kept on hand at all times, and, through the influence of the members, arrangements have been made to secure the most desirable kinds at the lowest figure. These will be sold to the members at a price which will make it worth while for them to patronize the club and at the same time will result in profit to the organization.

The membership of the club is limited to one hundred, and there has been a waiting list since a few weeks after the scheme for building the house took substantial form.

The officers are: President, Prescott Adamson; vice-president, H. W. Butterworth; secretary and treasurer, Robert P. Hooper.

A Toronto (Canada) motorist has been convicted and fined for selling his car and keeping the license and number for the new one.

Farson's Injunction Covers All.

Confusion worse confounded about hits off the Chicago automobile situation just now. The city and park officials are wondering where they are "at," while John Farson and his rapidly growing band of admiring supporters are "standing pat" and asking the aforementioned officials what they are going to do about it.

The Farson injunctions still hold. Furthermore, Judge Hanecy has declared that they are binding against the park boards or whoever else attempts to ignore them; and as any motorist can obtain the protection of the injunction by merely asking to be made a part of it—a batch of two hundred and fifty did this at one lick last week—it will not be long before there will be no one without the pale.

One park board, that for the West Park, passed a rule requiring horns to be sounded; another, the North Side, forbid "tooting." Other conflicting rules were passed, until Judge Hanecy was appealed to, and he declared that the original injunction given the motorists would protect them against any and all ordinances that have been or may be passed by the park boards.

Glidden Cup will be Handsome.

The design for the $2,000 cup which is to be known as the Glidden Trophy has been completed. The cup will be a sterling silver globe, representing the world, supported on a pedestal of two caryatides back to back, conveying the idea of the eastern and western hemispheres. The style is classical renaissance, treating the figures of victory in conventional form, laurel wreaths pending from the shoulders, flexible for use as handles. The wings support the globe turning on axis, which will be etched and enamelled to distinguish the water from the land, with the principal countries disposed about the sphere. The height, including that of a small model automobile at the apex containing a sprig of laurel, will be 46 inches. Four hundred ounces of silver will be used in the construction.

TIE AT PROVIDENCE

Hill Climbing Contest Provides Excitement and a Protest Creating Odd Situation.

Sixteen cars competed in the annual hill-climb of the Rhode Island Automobile Club at Providence on November 26. All of last year's records in each class were lowered. The hill is one-third of a mile in length, with an average grade of 14 per cent. There are two sharp turns, one directly at the bottom and the other about a third of the way up, where the road has a turn of nearly 90 degrees. The hill rises steadily for about half the distance, when a 23 per cent grade is encountered, which reaches almost to the top. Electric wires had been strung, and the timers were to have been notified of the start of each car by the ringing of a bell, but the wires would not work, and flags were used to signal the start of each car.

The grand prize for the best time was awarded to B. F. Blackinton, whose time was 47 4-5 seconds. The prize was a silver cup donated by C. Prescott Knight, and must be won three times by the same man before it becomes his property. Blackinton's time was bettered by J. L. Snow, who made the climb in 46 seconds in the run-off of his tie with A. E. Adams in the heavy gasolene class. Harry Martin, owner of the car that Snow drove, protested against the award to Blackinton, but the committee ruled that only the times made in the regular events counted. The club offered silver cups for first and second prizes in all events where there were three or more starters.

Arthur Feltham won in the electric class, with Archie Hughes's Waverly in 1:11 4-5, which is less than half the time of the winner in the same class last year, when H. H. Rice won in 2:56. R. L. Lippit, who drove the defeated car in the electric class, had the satisfaction of winning in the class for gasolene machines costing $1,500 and less. J. L. Snow, in Harry Martin's Peerless and A. E. Adams in the Pope-Toledo owned by W. K. Foss, former manager of the Pope store, in Providence, and now at Boston, tied at 48 seconds in their first attempts. In the run-off, Adams was one-fifth of a second slower than his first try, but Snow bettered his time by two seconds.

Summaries

Electric—
Archie Hughes (Arthur Feltham), Waverley, time 1:11 4-5; R. L. Lippitt (owner), Waverley, time 1:43.

Steam—
B. F. Blackinton (owner), Stanley, time 0:47 4-5; L. T. N. Baldwin (owner), Stanley, time 0:52; Lowell Emerson (owner), Stanley, time 1:17.

Gasolene cars costing $1,500 and less—
R. L. Lippitt (owner), Franklin, time 1:29; N. S. Davis (J. Risley), Columbia, time 1:32; Archie Hughes (Jeff Crawford), Pope-Hartford, time 1:35; Ezra Perkins (owner), Stevens-Duryea, time 1:41; W. W. Whitten (owner), Rambler, time 1:49 1-2.

Gasolene cars costing over $1,500—
*W. K. Foss (A. E. Adams), Pope-Toledo, time 0:48; *Harry Martin (J. L. Snow), Peerless, time 0:48; Archie Hughes (owner), Pope-Toledo, time 0:56; John Shepard (A. Sexton), G. R. B., time 1:10; Darwin Almy (owner), Winton, time 1:11; Arthur Lee (owner), Pope-Toledo, time 1:16.

*Tie. In the run-off, Snow's time was 46 seconds, Adams's 48 1-5 seconds.

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BEVEL GEAR VS. CHAIN

Comparison of the Two Systems of Transmission Makes Honors Appear Easy.

The consideration of the merits of the bevel gear drive for automobiles as compared with the chain is naturally before the purchaser when he thinks of buying.

The two types or principles still exist side by side in the bicycle trade, and, probably, always will. One purchaser is best suited by a chain for his particular kind of use for a bicycle; another is best suited by the bevel gear, all things considered.

It is probable that this will be the final outcome in the automobile industry as well. There is no apparent reason why the two systems should not exist, why each should not fill the wants of a certain number of purchasers. One manufacturer or purchaser may be the strongest kind of an advocate of the bevel gear and another of the chain.

The efficiency of the two systems was very carefully gone into, as connected with bicycles. It was positively determined by the experiments of Denton, Souther, Carpenter and others that the difference in efficiency was so small, as compared with other losses of power in the bicycle, that it might be entirely neglected.

For example, the difference between a racing tire and a road tire was easily shown to be from 5 to 15 per cent loss of power. The difference between chains and gears, all other things being equal, it was impossible to measure. The amount of wind pressure in the tires could be easily measured, and made a difference of 4 or 5 per cent.

Consequently, it is fair to say that the loss of power of the one system more than the other may be disregarded.

Looking at the construction in each case, it is seen that the engine power is transmitted by a shaft, alike in both systems, through clutch and transmission gears. With a chain driven machine there comes next a pair of bevel gears driving the countershaft, which carries one or two small sprockets, depending upon whether single or double chain drive.

The chains then transmit the power from the small sprockets to large sprockets directly connected with the rear wheels, running loose and independently on the rear axles.

In the case of the bevel gear, the shaft, after leaving the transmission case, is carried directly to the rear axle, and has on its end a bevel gear pinion meshing with a bevel gear driving a shaft directly attached to and rotating the rear wheels.

It is to be noticed, therefore, that both systems transmit through a set of bevel gears, the arrangement being quite different, however.

As to strength of construction: The rear axle of a chain driven machine is exceedingly simple in its construction; it is exactly like that of any wagon, except that sprockets are attached to the hubs, to be driven by chains.

The rear axle of a bevel gear driven machine is considerably more complicated. It has the bevel gears at its center, thus dividing it; an outer tubular axle through which the driving axle runs, in which are supported bearings for the interior moving axle. Properly constructed, with a sufficient knowledge of the strains involved, and in consideration of the power transmitted, little trouble has been experienced, and the machines made by reliable makers have given good satisfaction.

In short, the complications of construction are all centered on the rear axle of the bevel gear driven machine, and are not distributed between the rear axle and the countershaft, as on a chain driven machine.

The care of a chain driven machine, as to lubrication and wear, is distributed between the countershaft, the chains and the rear sprocket.

The care of a bevel gear driven machine is all confined to the rear axle, which must be thoroughly lubricated by the best of oils.

Both systems of transmission have been in use in the mechanical world as far back as records go. Immense improvements are being made in both the manufacture of chains, sprockets and bevel gears. The nicety of manufacture, relative cutting of chain and sprockets, and fine meshing of bevel gears has become an art, a specialty in machine building. Some makers have found that relation between pitch of chain and sprocket which gives noiseless transmission; others have not. Some makers have put out bevel gears which are positively noiseless and cannot be felt; others have not.

The purchaser is free to buy without being greatly influenced by the form of transmission, being reasonably sure that the best of either kind will give him good satisfaction.

It will be seen at once that the above remarks do not apply to any automobile the crank shaft of which is parallel with the rear axle. It does apply to all machines with crank shafts perpendicular to the rear axle.

Care of the Clutch.

The proper care of a leather faced clutch is essential to the smooth running of a car. A clutch that is too dry is fierce, and causes an unpleasant jerk and strain upon the car when starting or changing gear, while if the clutch is allowed to become saturated with lubricating oil or water the consequent slip is most annoying to the driver, besides being bad for engine and transmission gear. The leather should be well cleaned with gasolene occasionally, and then dressed with castor or, better still, collan oil. This will keep it supple enough to take good hold of the metal of the coned flywheel, and yet in such condition that the clutch can be allowed to slip without undue jerking when it is desired to coax the car over the brow of a hill without changing speed.

USING THE WASTE GASES

How an Ingenious Frenchman Employs Them for Ignition or Illuminating Purposes.

It is customary to style the gases which issue from the exhaust as "waste" gases; but in time this description will be quite erroneous. Already some portion of the exhaust is used for heating the carburetter, for supplying pressure in the various tanks, or for pumping tires.

It has remained for M. Bleriot, a French engineer, to devise an ingenious scheme for utilizing the heat of the exhaust gases in yet another manner. He takes advantage of the method by which thermo-electricity is produced, namely, the coupling together of two metals, such as nickel and copper, and obtaining an electric current which depends on the difference in temperature of the points of contact, when one end of both metals is heated and the other cooled.

Around the exhaust pipe are a series of copper tubes insulated from the metal of the exhaust pipe itself. Into the copper tubes nickel threads are run, so that each pair forms a little thermo-electric battery. They are all coupled up in series, and are so arranged that, while the inner ends are heated by the exhaust gases coming through the pipe, the outer ends are cooled by contact with the air. The current is collected at two terminals, and may be utilized, the inventor claims, for the headlights or for ignition purposes.

Chicago Tries a Street Sweeper.

Superintendent Fox, of the citizens' street cleaning bureau of Chicago, has introduced automobile street sweepers in that city and is enthusiastic over their work. This machine not only sweeps the street over which it runs, but by an elevator system collects the dirt into a box on top. It is also equipped with a water tank, which sprinkles the street and prevents the spread of dust. The new machine is entirely automatic and requires but one attendant. It is claimed the new method is much cheaper than the old, which required carts and attendants who collected and carried away the dirt swept up. Other cities will probably inaugurate automobile street sweepers if they prove successful after a thorough trial has been given them.

St. Louis Experiments with Sprinklers.

The street department officers in St. Louis are busy experimenting with automobile sprinklers to determine whether there is greater economy in operating the sprinklers with motor power or to continue drawing the water wagons the old-fashioned way, with mule power. The first test was made last week, and was for the purpose of ascertaining how much power will be needed for the propulsion of the water wagons. A 24 horsepower automobile was hitched to the city's largest sprinkler and pulled it easily. Automobiles of less power will now be tried.

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The Gold Medal to Solar Lamps

Award by the jury at the Universal Exposition at St. Louis

Confirms our repeated claims that Solar Lamps are THE BEST acetylene and oil automobile, motor car and cycle lamps manufactured in this or any other country. This award was made after a careful examination by the leading experts of the world of all lines of lamps. We are justly proud of the showing made by Solar Lamps and are more convinced than ever that our policy of honest manufacture, use of best materials, and highest skilled labor, pays.

OUR 1905 LINE OF SOLARS NOW READY AND ARE BETTER THAN EVER.

To the manufacturers of automobiles we desire to say that Solar Lamps as an equipment add greatly to the appearance and selling qualities of any automobile.

To the drivers of automobiles we wish to enlarge upon the fact that Solar Lamps and our 1905 Generator mean NO LAMP TROUBLES.

We shall continue our policy of absolutely guaranteeing perfect satisfaction. Let us know when you are ready for 1905 samples and prices.

The Badger Brass Mfg. Co.

New York Office:
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Kenosha, Wis., U. S. A.

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MEASURING POWER

Renard's Ingenious Device, How It Performs Its Work and What It Discloses.

It is pretty well known that the Automobile Club of France has been in the habit from time to time of conducting exhaustive tests of important parts of the automobile, it having installed in its laboratory some very elaborate devices. A test of carburetters was made last summer with marked success.

Recently another department has been added to the laboratory for ascertaining the power developed by motors and absorbed by transmissions with the aid of the dynamometric mill invented by Colonel Renard, whose name is well known as the inventor of the military balloon "France" a quarter of a century ago, the Renard road train and a variety of other devices associated with automobilism.

Colonel Renard first presented the dynamometric mill—the apparatus is much simpler than is suggested by the name—at a congress held in Paris two years ago. It is based upon an entirely new principle of utilizing air resistance as a means of measuring the power developed. The apparatus employed for this purpose is an arm of rectangular section of elm, or other suitable wood, revolving on the end of a shaft to which it is fixed. Through this arm is bored a number of holes in which two square aluminum plates are bolted, one at each end. As the mill revolves the resistance offered by the plates varies according to their area and to the distance separating them—that is to say, as the plates are placed closer together the resistance diminishes and attains its maximum when they are at the extreme ends. The area of the plates is calculated for mills suitable for testing motors within certain limits of power.

Colonel Renard had necessarily to carry out a very long and exhaustive series of experiments before he could ascertain the exact resistance offered by the area of the plates, their position and speed of mill, and incidentally it may be remarked that in experimenting with various forms of plates he obtained some extremely interesting data, a spherical ball offering about forty times less resistance than a flat plate of the same sectional area. This experiment fully bore out the practical results obtained by makers in building their high speed racing cars with bodies offering curved lines to the air resistance.

It is evident that having obtained a scale of resistance at various speeds and positions of the plates, this very simple apparatus can be employed to accurately measure the power of the engine to which it is attached.

The engine to be tested is bolted to a wooden bed, which is in its turn solidly fastened to girders built into the masonry. By the side of the motor is a heavy wooden frame bolted to the ground. To this is fixed a horizontal tube in which revolves part of the universal jointed shaft, to one end of which is keyed the mill. The other end of the shaft is keyed to the crank shaft. In testing the motor it is, of course, necessary to know exactly at what speed the mill is revolving, so that by referring to the scale the resistance offered at this speed can be ascertained.

Besides the usual mechanical indicators showing the number of revolutions in a given time, the installation is fitted with the new Teletachymetre constructed by Messrs. Chauvin & Arnaux. This consists of a small magneto fixed to the frame and driven by a rubber band from a wheel on the universal jointed shaft. The variations are indicated by a needle on a gauge and corresponding to the number of revolutions marked on the dial. A number of mills of different lengths, and with plates of different sizes, are employed for measuring the power developed by engines ranging from little bicycle motors up to motors of 100 horsepower.

It will easily be seen that if motors can be measured in this way there is no reason why a measurement should not be taken of the power developed on the driving axle, so that it is possible to ascertain with the greatest accuracy the amount of power absorbed by friction between the engine and the driving axle. For this purpose an installation has been fitted up, consisting of a bed of masonry of a suitable height, with an incline up which the car is drawn by winding gear. The front of the car is fixed by ropes and the rear part is raised on wooden supports bolted to wedges inside the grooves formed by the girders built in the masonry bed. On each side of the bed is a stand carrying a mill, one of them capable of being moved longitudinally so as to adjust it to the width of the car. The mill is the same as has already been described, but the end of the universal jointed shaft carries a metal cone which is fixed to the spokes by means of bolts and cross pieces. The power developed on the axle is then measured in the way already indicated, and the difference between this power and that developed by the motor gives the exact amount of frictional loss in transmission.

The Renard apparatus is extremely useful as a ready and accurate means of measuring the power of engines, and it is providing a lot of valuable data which will throw an interesting light upon the efficiency of the various forms of power transmitting gears.

Taking Time by the Forelock.

Impelled by the belief that the doom of the horse, so far as city streets is concerned, is impending, a well known painter of Parisian life, M. Louis Vallet, proposes the organization of a permanent museum of vehicles, including in the collection those used to-day not only in Paris but in all parts of the world. Several great savants and collectors are supporting him in his scheme, and it is hoped that the State will provide a building and money for carrying the suggestion into effect. An exhibition of vehicles of the eighteenth and nineteenth centuries, which already exists at Versailles, might form the nucleus of the projected museum.

COOLING THE MOTOR

Frenchman Discusses the Subject and Concludes that Problem has not been Solved.

In gasolene motors the combustion of the mixture releases a great quantity of heat, of which one part is transformed into useful work, another is dissipated in the walls of the combustion chamber and cylinder, while the third escapes through the exhaust, says H. Andre in La France Automobile. The temperatures of the first two are pretty nearly equal, and after experiments by investigators it is estimated that at the moment of combustion the heat often exceeds 1,800 and even 2,000 degrees centigrade.

That extreme heat would quickly carry the walls of the cylinder to a temperature incompatible with the proper working of the motor if provision were not made for the constant cooling of their surfaces. Following on the too great elevation of temperature of the walls of the motor it would be exposed to a number of evil consequences which we will enumerate. In the first place, it would be impossible to insure proper lubrication of the cylinders, because the best oils for resisting heat will decompose at about 300 degrees, and give off carbonic deposits detrimental to the good working of the valves and motor in general. Second, the excessive and unequal expansion of the parts adjusted with great precision, notably the cylinder and piston, would interfere with the working and play of the motor. Third, there is always danger of the piston seizing; also there is fear for the welding of the head of the connecting rod and the crank; the bad effects on the valves, esjecially the exhaust valves, which receive the rush of the burning gases.

Cooling, then, is absolutely necessary. But it is not necessary to push this question of cooling to excess, because a greater quantity of heat produced by combustion will be dissipated in the walls without producing useful work than is necessary, and the efficiency of the motor will be to that extent diminished. Unfortunately, in spite of the great progress accomplished during recent years, there is not yet any well defined limit of the extent of this cooling, which constitutes one of the greatest imperfections of the gasolene motor.

The method of cooling, of whatever kind, must fulfil certain conditions, of which the following are the principal: '1) The cooling must be neither too energetic nor insufficient. (2) It must be independent of the speed of the motor, and, as a result of that, of the car.

The necessity for these conditions will be readily understood. Suppose that the water circulation is most active when the speed is greatest, and, inversely, when the motor slows on account of increased effort required, such as surmounting a hill, the cooling becomes less active, and the motor heats or tends to heat. If after slowing the motor quickens, the cooling increases with brusque

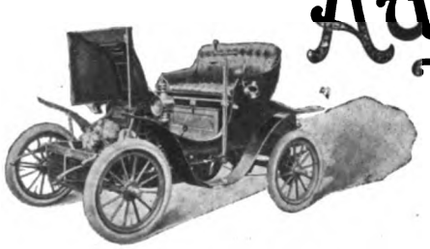
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intensity, but the walls of the cylinder cool before the piston, and, on account of the slight clearance, there is a tendency to friction, resulting from the different rates of expansion produced. The best mode of cooling is that in which sudden changes are avoided, and which tends to maintain the walls at as uniform a temperature as possible.

The processes of cooling these may be divided into two main categories: (1) The processes in which the cylinder cedes the heat to the surrounding air or to cold gases introduced into its interior. (2) The processes by which the cylinder cedes the heat directly to water or other liquid which may be put into contact with its exterior or interior.

Cooling by air is generally effected on the exterior; sometimes, and especially with two-cycle motors, by a current of pure air or carbidised air introduced into the cylinder; in such case the current clears the burnt gases from the cylinder. But the most efficacious method of cooling by air is that in which the cylinder cedes the heat directly to the surrounding atmosphere. To render this method more efficient the cooling surface is increased by furnishing the cylinder with suitable ribs or flanges. These ribs generally form a part of the cylinder casting, but in some cases attempts have been made to use copper ribs because of its great conductivity and extreme emissive quality.

It is essential, however, in using air cooling by ribs to provide for renewing the air about the cylinder, and to render easy the circulation of the air about its surface. Some makers have endeavored to increase the activity of the circulation about the ribs by various devices. M. Lepape has tried a method of enveloping the cylinder in a sheath, in which he creates a forced draught by means of an extension of the exhaust. But at the end of a journey of any length the efficacy of this system diminished, and the cooling was no longer sufficient. The Hurter and G. Richard firms have tried the use of a fan in front of the ribs, but the cooling then must depend on the speed of the motor, as the fan is necessarily actuated by the latter. This means, then, that no one has solved the problem in its entirety.



Auto-Talks

NUMBER TWO.

Our first "Auto-talk" we devoted solely to *value.*

In this, the second, we will touch upon the subject of construction. While all the good points of Autocar construction cannot be covered in a talk of this length, we want to bring to your attention some of the features of the Autocar which are so obviously advantageous that they must be appreciated by the veriest novice.

The illustration above shows the easy accessibility of the Autocar motor. It is never necessary to crawl under an Autocar or to remove the body. To reach the motor you have only to lift up the hood in front. To get at the transmission case simply lift up the floor between front seat and dashboard.

The mechanism of the Autocar is exceedingly simple; this applies to both the working and the steering parts. The novice will not find in the Autocar the appalling intricacy of parts that he may have come to believe inseparable from an automobile.

The engine in all Autocars is of the two cylinder horizontal opposed type, which means that there is no noticeable vibration. The engine of the four-passenger car develops 12 actual horse power, that of the runabout 10 actual horse power. The engine is oiled automatically, is water cooled, and the number of parts is reduced to a minimum.

The autocar transmission is ball-bearing. The car is gear-driven—no chain. Ample brakes are provided.

The double spark coil used in the Autocar is of the very best and most approved type. The gasolene tank holds ten gallons, which, on good roads, is sufficient for 200 miles.

All parts of the Autocar, with the exception of bodies and tires, are made in the Autocar shops. They are made by men who have been building successful automobiles for eight years. Every part is made in harmony with every other part, so that the entire mechanism operates in perfect unity.

We know that none but the best materials go into Autocar construction, and we know that the workmanship is expert and thorough.

Autocar bodies are made for us by a leading body maker, and are finisehd like the finest coaches.

The Autocar has a speed of from 3 to 35 miles an hour. Extreme ease of control is attained through an unusually simple arrangement of levers.

The price of the Autocar Runabout, shown above, is $900; the Autocar Four-Passenger Car, $1,700.

In our next month's talk we will tell you of the Autocar's performance. Our booklet, which we send free, gives full description of the Autocar's construction, and addresses of our dealers throughout the country. You should have it.

THE AUTOCAR COMPANY, - Ardmore, Pa.

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Hotel Rates range from $8 to $35 per week, including free use of all the waters.

Booklet telling all about the waters and giving list of Hotels and Boarding Houses, with their rates, sent free.

FRANK H. REED, Gen. Pass. Agt., Chicago.

CHAS. H. ROCKWELL, Traffic Man.



SOLVES THE Bullock IGNITION PROBLEM.

THE Bullock IGNITION SYSTEM DOES AWAY WITH ALL INDUCTION AND SPARK COILS, SOOT AND HIGH VOLTAGE TROUBLES.

THE Bullock "SPECIAL" CAN BE OPERATED WITH ANY SIZE ORDINARY DRY BATTERIES 6 BEING AMPLY SUFFICIENT AND EFFECTS GREAT ECONOMY IN CURRENT CONSUMPTION.

WRITE FOR BULLETIN-W.

THE BULLOCK-BERESFORD M'F'G. CO., CLEVELAND, O.

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TOURING IN HAWAII

Experiences that Added Interest to the Honeymooning of a San Francisco Pair.

Many novel experiences were met with by George A. Turner and Mrs. Turner, of San Francisco, who spent their honeymoon touring the Hawaiian Isladds in an automobile. The journey was made last summer, and all the driving was done in Mr. Turner's Rambler car, which he took with him for the purpose.

There are many fine roads to all parts of the island leading out of Honolulu, and the plantation owners are taking it upon themselves to improve the highways. Aside from the many drives on the island of Hawaii, the roads are being put into condition so that in a very short time it will be possible, by taking one of the inter-island steamers, to make a trip to Kilanea, the largest active volcano in the world. When this is finished—and it is promised that it will be by next year—it will present a most interesting trip for the automobilist. Mr. Turner intended to make this trip, but was cautioned not to attempt it, as the lava formation would ruin the tires. During the month's tour of the islands but one puncture did the tires invite, and that was caused by a nail (sent across from San Francisco).

It is quite probable that in the very near future a great many larger automobiles will be in use on the islands, not only for pleasure but for business, as the climate is exceedingly hard on horse flesh, and it is most expensive to keep equines, as there is very little feed raised, the land being more valuable for sugar cane, pineapple and other products. The cars, however, must of necessity be of ample power, as the formation of the islands is mountainous, and while the roads give evidence of much careful engineering, and as a rule exceptional care is taken of them, there are naturally many grades that would tax the power of ordinary cars.

The citizens, both native and white, are very courteous and seem to welcome the automobile. The island people took very kindly to the modern creation, and some years ago a company was formed and a number of electric machines were put on rental, but the venture was not successful, as the electric vehicles were in their infancy, and as their facilities were not of the best they caused a great deal of dissatisfa tion. There are a great many people in Honolulu now, judging from the first machines, who are quite sceptical as to the reliability of the motor car of to-day, but this is gradually wearing off, and it will not be long before machines in the islands will be plentiful.

Mr. Turner relates many interesting stories and incidents of his Honolulu trip.

"It was quite amusing," he said, "to note many ways in which the natives received the 'red devil" in some of the more remote districts. I have in mind a trip we made up the Kelihi Valley. We had been driving along at a pretty brisk clip, and in making a turn came upon what appeared to be a native picnic. We had given notice of our approach by a liberal use of the horn, consequently when we made our appearance on the turn all were on a lookout to see what was coming. A number were on the fences that lined both sides of the road, and at first sight of the machine they nearly broke their necks in tumbling off and seeking shelter, and the next moment all we could observe was black heads peeping out, reminding one very much of the action of the little ground squirrels as we pass along the road. We stopped to give them a chance to see the automobile, and very soon the more venturesome of the party approached, but taking great care not to get too close. We soon quieted their fears, and before we knew it we were in the center of a very much interested group flocked about us with their fears fully allayed."

The horses on the island show no unusual fright or timidity toward the automobiles. There are no laws or legislation against their use, and, in fact, there is not one element detrimental to a very pleasant tour of the islands with an automobile. When one considers the very low rates of transportation there is no question but what future tourists possessing automobiles will take them along on trips to Honolulu.

In leaving San Francisco the Oceanic Steamship Company accepts machines in running condition, no preparation other than the emptying of the gasolene tank being required. It is very advisable to use these steamers, as their ports are large enough to permit a machine being run into the baggage room, and this makes unnecessary the use of a rope and derrick to hoist the automobile aboard, as is the case on the other steamers to the islands. The freight on a large sized car is the nominal one of $35 a round trip, and they handle the machine with the utmost care. Mr. Turner's Rambler had company on the trip down, as the Rambler agency shipped down on the same steamer a canopy top touring car for Charles M. Cook, a prominent banker of Honolulu. Both cars went through without a scratch.

There are many finely equipped machine shops on the island, and gasolene is readily obtained, and a good quality at $3.75 per case of 10 gallons. The climate is particularly suitable for gasolene powered cars owing to the constant high temperature. The Von Hamm Young Co. carry a complete line of tires, and in conjunction with their establishment have a thorough equipped machine shop.

There are three first class hotels in Honolulu—the Alexander Young, the Royal Hawaii and the Moana, all of which either have accommodations or are arranging same for the care of automobiles.

The Palli drive is one of the most interesting trips of which one can conceive. The run is from the west to the eastern portion of Honolulu over exceptionally well kept roads, and there unfolds a view that would be hard to excel. After a descent of some five miles one suddenly is surrounded by rice and other plantations of exceeding interest. In fact, Honolulu as an automobile touring ground of exceptional interest is hard to surpass on the globe.

Mr. Turner has a few suggestions for motorists who contemplate taking this trip.

"Carry your canopy top with the machine, as the rains, while of only short duration, are a very frequent occurrence," he says. "As they are warm, however, very little discomfort is gotten from them, and no doubt they are beneficial, as they lay the dust and make touring all the more enjoyable."

Wreck Due to Politeness.

An act of politeness was responsible for the wreck of the automobile belonging to A. J. Hatch, a New York broker, whose home is in Stamford, Conn. Mr. Hatch's son, Edward, was riding alone in the automobile up a Stamford street Tuesday afternoon last, when a young woman acquaintance passed. He raised his hat to her, and as he did so the rear wheels caught in the car tracks, swerved suddenly, and dashed against the curbing. The collision demolished the front of the machine and hurled Hatch headlong to the pavement, but, strangely enough, he was uninjured.

Here's the Up-to-Date Sheriff.

Lawbreakers in Nebraska must needs be wary now, as that State boasts of at least one up-to-date Sheriff, who uses an automobile to run down persons who he thinks would be safer behind the bars than at large. Recently William Holden, a farm hand, entered the Platte Valley Bank, Platte Center, Neb., demanded the bank's cash, and on the refusal of Cashier Barney Schroeder to surrender it shot the latter in the breast, then escaped in a buggy. Sheriff Carney took up the pursuit in an automobile, and after an exciting chase captured his man.

How the Bank was Saved.

Out in Ohio the automobile has proved a valuable acquisition in time of a run on a bank. Last week the depositors in the Willoughby branch of the Wade Park Banking Co. of Cleveland heard that the bank had been affected by suits brought against it, and straightaway made a run for their savings. The bank officials telephoned to their bank in Cleveland for funds, and in a few minutes an automobile dashed up to the Willoughby institution and unloaded $ 75,000, which stopped the run and satisfied the depositors.

Saws Wood and Says Something.

Palmer Jordan, a farmer, living at Danielson, Conn., is doing almost all of the wood cutting in his neighborhood at a low rate, says the Boston Herald. He bought an old automobile in Providence recently, and fixed it up so he can attach a belt to the machinery and run a saw. He carries the saw around in the automobile, and goes from one farmer to another, cutting their wood for them.

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Sarcasm of the Star.

"Everybody that doesn't own an automobile knows that the man who does is a villain and a pup," is the elegant way the Peoria (Ill.) Star puts it.

"The automobilist has been tried at the great bar of public opinion and convicted of being a murderer, a coward, a destroyer of happy homes and an enemy to righteousness and the human frame. But until recently it was not believed that he added to his other crimes that of being a trickster.

"Yet such is even the case. Not long ago, it seems, a travelling salesman of a particularly slick and insinuating sort struck Peoria. He was selling a patent device to be attached to automobiles whereby the chauffeur could so manipulate the number which the law compels him to place on the rear of his machine that it would be made invisible at will.

"Sad to say, this meretricious device for cheating the law and fooling the public found a ready sale here. In fact, it is stated that the slick salesman sold out his entire outfit in one day and had to telegraph to the house for more.

"This is a terrible commentary on the moral status of the Peoria automobilist, and shows that the poor common people are at the mercy of a lot of miscreants. For now all a chauffeur has to do is to run over a man, reverse the nnmber on the rear end of his death dealing devil wagon and choo-choo gayly away, giving the corpse and the mourners and the sleuths of justice the merry ha-ha.

"It is said by eyewitnesses to the affair that when a big gasolene touring car ran into Mr. Frye's buggy last Sunday across the wagon bridge he applied this devilish device to his number, shouted defiance at the luckless young man and steamed carelessly over the bridge, his automobile filled with beautiful young ladies and millinery and his heart filed with black wickedness. Here is a matter for the city authorities to prayerfully investigate. If there is a naughty scheme on foot to make automobile numbers invisible and cheat justice of her prey in case of a collision, it should be run to earth, published forth to the world and the instigators thereof punished as they deserve."

Gurney is Now Safe.

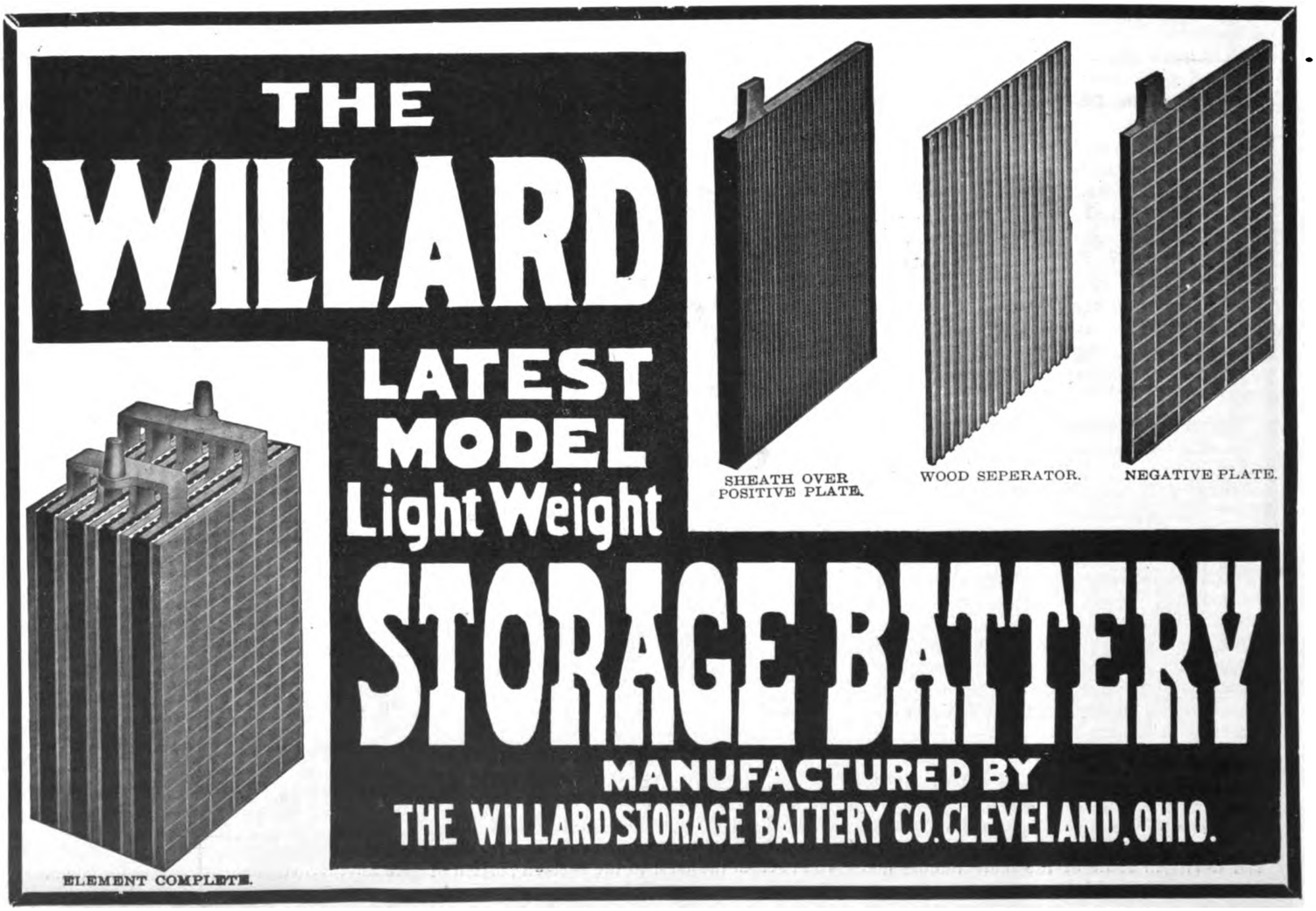
Among recent purchasers of Waverly electrics is Hugh Gurney, secretary of the British Embassy to this country. His unpleasant experience a month or two ago, when a Massachusetts justice summarily fined him for speeding, and was subsequently obliged to apologize for his unceremonious treatment of a member of the diplomatic corps, will be recalled.

List!. the Voice of the Farmer.

Farmers' journals are generally rabid in their abuse of everything pertaining to automobiles and their users, but the editor of the Farm Star, Indianapolis, Ind., takes an eminently sensible view of the question. He thinks it hardly probable that any radical measures will be adopted by the Indiana State legislature this session, as there has been too much heated discussion of the subject. After saying that in some parts of the State the feelings of the farmers are very bitter against automobile drivers, he adds the following:

"The automobile is here to stay. It is no longer a luxury, but it is getting to be almost a necessity. The drivers have as much right on the highways of the State as travellers that may be using any other kind of locomotion. Some automobilists have undoubtedly proceeded along the idea that no one else has any rights when they are under full speed, and this accounts for the strong feeling against them.

"A low rate of speed when passing a horse will probably be the gist of the measures that will be proposed for adoption by the State legislature. It is, of course, impracticable to require that the machines come to a full stop. The rate of speed, however, should be so low that it would be the next thing to a stop."



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I HEARD DAD TELL A CHAP THE OTHER DAY THAT THOSE "HAGUE" FELLOWS WERE N'T IN IT WITH MORGAN & WRIGHT CLINCHER TIRES WHEN IT CAME TO PUTTIN' AN END TO TROUBLE

MESSRS. MORGAN & WRIGHT, Chicago.
Gentlemen—Allow me to congratulate you on the excellence of your Clincher tires. I placed them on my Packard Touring car last May, and though the car has been in constant use since, I have enjoyed the very maximum of tire comfort. **They have not given me a moment's trouble,** and to me, who, up to that time, has experienced **all** the tire worries, and **few** of the pleasures of auto driving, it is certainly a pleasure to find so reliable a tire as is yours.
Yours for the M. & W. Clincher tire, P. BRICKBAUN, M. D., St. Louis, Mo.

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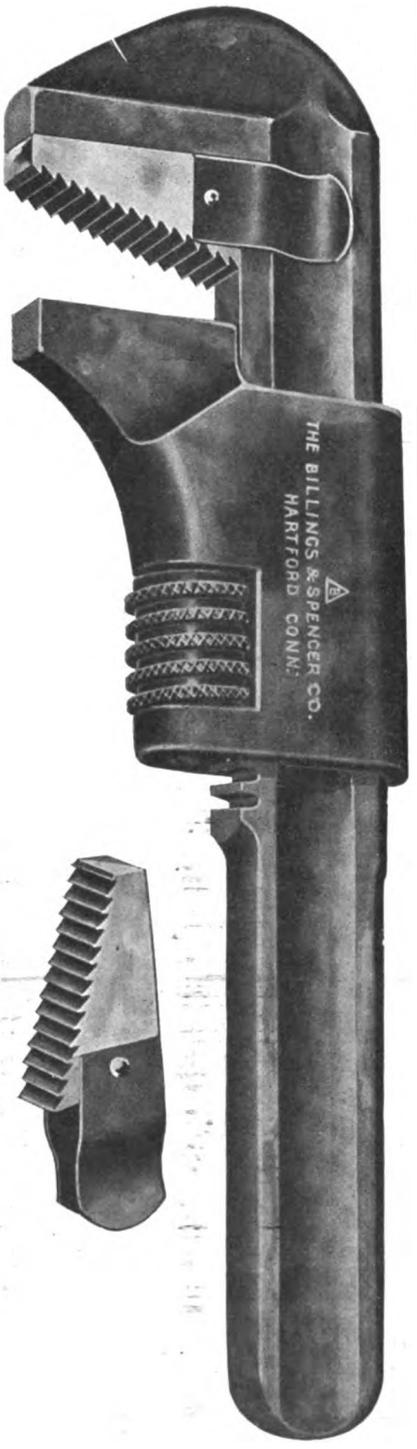
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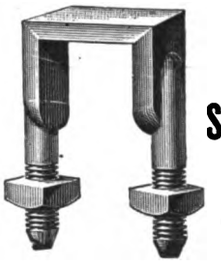
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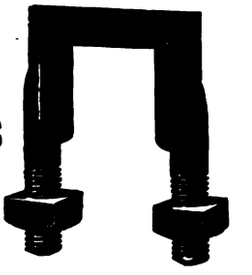
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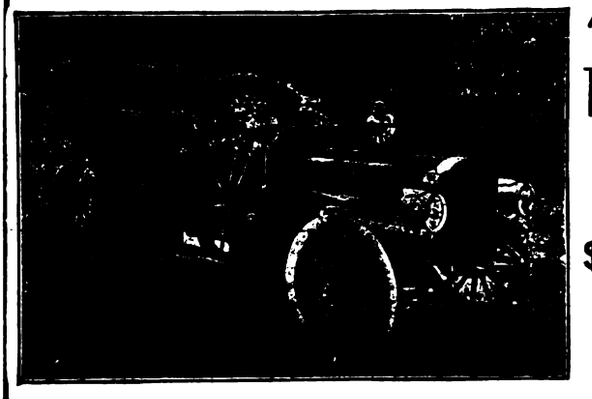
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The Week's Patents.

775,224.—Automobile attachment. James B. Mott, Fredonia, N. Y. Filed August 5, 1904. Serial No. 219,631. (No model.)

Claim.—An automobile provided with a rear deck section, means for removably securing the same in place, the deck section being adapted to engage the stationary rear deck portion of the automobile and said deck section having a closure, and means for removably holding the same in active position.

775,233.—Automobile driving gear. George C. Cannon, New York, N. Y. Filed Nov. 5, 1903. Serial No. 179,934. (No model.)

Claim.—The combination of a sectional crank shaft, said sections having flanges respectively on their contiguous ends, a gear set between said flanges, gibs bearing between the flanges and gear, and means for fastening the flanges and gear together.

12,284.—Change speed gearing. Louis P. Mooers, Cleveland, Ohio, assignor, by mesne assignments, to the Peerless Motor Car Company, Cleveland, Ohio, a corporation of West Virginia. Filed Sept. 24, 1904. Serial No. 225,834. Original No. 737,442, dated August 25, 1903.

Claim.—The combination of the driven shaft C, the shaft E, a gear e^2 fast upon the latter shaft, an endwise movable and normally inactive reversing pinion h adapted to be moved into mesh with gear e^2, a sliding gear d on shaft C, a single shifting device, and mechanism operated thereby which moves the gear d and pinion h toward each other and carries the ger d into engagement with gear e^2 and then past it, and carries the pinion h into mesh with both gears d and d^2.

775,321. Vaporizer for Hydrocarbon Motors. August Wassmann, Astoria, N. Y., assignor to Abbot Augustus Low, Horseshoe, N. Y. Filed November 24, 1903. Serial No. 182,455. (No model.)

Claim—1. In a motor of the character designated, the combination of a piston cylinder formed with a water jacket, means for introducing water into said jacket, an ignition chamber communicating with said piston cyl-

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inder and formed with a hood having a water space therein, means for admitting water from the said cylinder water jacket to the said hood on the igniter, means for controlling the flow of water to said hood and means for discharging water from said hood for the purpose described.

775,355. Chain Connecting Device. Cyrus E. Smith, Fall River, Mass. Filed July 7, 1904. Serial No. 215,659. (No model.)

Claim—1. In a device of the class described, the combination with a frame having spaced bearings and carrying a hook, of a shank movably extending through the bearings and having a hook, and an adjusting device engaging the frame and shank for moving the latter through the bearings of the former and thereby moving said hooks toward each other.

775,381. Motor Goggles. Harry Newbold, London, England, assignor to Jas. Atchison, London, England. Filed August 6, 1904. Serial No. 219,799. (No model.)

Claim—1. A pair of goggles comprising among their members a main frame consisting of two sections hinged together, an auxiliary frame section movably connected to each of said main frame sections and adapted to fold thereupon, and a flexible shield of fabric connected to each of said auxiliary frame sections and extending to the adjacent main frame section, whereby said main frame sections may be folded together and the auxiliary frame sections will fold upon the sections of the main frame, one set of said frame sections being provided with transparent material, substantially as described.

775,385. Incandescent Igniter for Explosive Engines. Patrick J. Shouvlin, Springfield, Ohio. Filed March 19, 1904. Serial No. 198,914. (No model.)

Claim—1. An igniter for explosive engines, comprising an ignition tube, a flue, or chimney, surrounding the same and provided with an opening in its wall, and a burner supported on said chimney and adjustable longitudinally thereof opposite said opening, substantially as described.

775,409. Power Transmitting and Reversing Mechanism. Robert Symmonds, Kenosha, Wis., assignor to Thomas B. Jeffery, Kenosha, Wis. Filed April 9, 1904. Serial No. 202,469. (No model.)

Claim—1. In a power transmission mechanism, the combination with a driving element, of a clutch fixed thereto, a co-operating movable clutch member, a driven element, a casing carried by the movable clutch member, and gearing mechanism inclosed in said casing operatively connecting the driving and driven elements.

775,492. Pneumatic Tire for Vehicle Wheels. Adrian R. Karreman and Oreste Del Guerra, Chicago, Ill. Filed April 27, 1904. Serial No. 205,268. (No model.)

Claim—1. In a pneumatic tire, a rim, a seat secured thereto and having side walls, and means for inding said walls against a tire, combined with a rubber tire having a thickened tread, a plurality of layers of fabric within said tire and having the edges folded within the seat to form two annular chambers of substantially rectangular cross section, and strengthening braces fitting in said chambers, and through which braces the binding means of the tire is passed, substantially as described.

775,503. Change Speed Gear. Alfred Soames and Walter Langdon-Davies, Surrey County, England. Filed January 18, 1904. Serial No. 189,616. (No model.)

Claim—1. In change speed gear, the combination of two shafts, gear wheels of varying diameter on each, each wheel on one adapted to mesh with a wheel on the other and one wheel of each intermeshing pair capable of being slid along its shaft to put it into or out of mesh with the other wheel of the pair, a friction clutch, a positive clutch driven by the friction clutch and itself driving one of the shafts, a selective lever by the movement of which any pair of wheels can be brought into mesh, a pedal lever, mechanism by which the first movement of this lever disengages the friction clutch, mechanism by which the further movement of this lever disengages the positive clutch and locking mechanism by which the selecting lever cannot be shifted unless the positive clutch has first been disengaged.

775,544. Indicator for Fluid Tanks. Frank A. Rantz and George W. Collin, Bridgeport, Conn. Filed Nov. 8, 1902. Serial No. 130,618. (No model.)

Claim—1. In a fluid tank indicator, the combination with a tank having a circular opening, a movable cap threadedly attached in the ring, depending guides attached to said cap, a yoke connecting the lower ends of the guides and being of less length than the diameter of the opening, a vertically disposed spiral stem rotatably mounted in the cap and yoke, a float mounted on the guides and engaging the spiral stem in a manner to turn the same by the rise and fall of the fluid in the tank, a magnet carried by said stem, an indicating needle exterior of and attached to the cap adapted to move and register with the position of and by the influence of the magnet on the inside, and a movable cover adapted to fit upon the cap to inclose the needle, substantially as shown and described.

775,553. Carburetter for Hydrocarbon Engines. George W. Burton and Alfred F. Seibel, Toledo, Ohio. Filed May 28, 1904. Serial No. 210,162. (No model.)

Claim—1. In a carburetter, the carburetter body having an air inlet and a mixed vapor outlet, a valve slidably mounted within the carburetter body having openings adapted to be brought into alignment with the vapor outlet, and a wedge shaped spraying chamber disposed at one end of the carburetter body adjacent to the air inlet in operative relation to said valve, substantially as described.

775,595. Dust Guard for Autocars. William H. Brown, Chicago, Ill. Filed March 31, 1904. Serial No. 201,003. (No model.)

Claim—1. The combination with an autocar, of a skirt extending from the lower portion of the car body as high as the seat, said skirt being spaced from the body and extending along the rear portion of the side of the body around the rear end thereof, substantially as described.

775,614. Carburetter for Explosive Engines. Geo. F. Swain, Harvey, Ill., assignor of one-half to Henry E. Kellogg, Harvey, Ill. Filed December 26, 1902. Serial No. 136,536. (No model.)

Claim—1. A carburetter comprising a casing having a vaporizer chamber and having a downwardly extended passage the lower end of which has a valve seat and is connected with the upper part of the vaporizing chamber for supplying liquid hydrocarbon thereto, a valve engaged with the valve seat and adapted to be opened by upward movement for controlling the passage and having a valve stem extended down into the vaporizing chamber, a foraminous vaporizer secured to the valve stem below the valve and adapted to receive the liquid hydrocarbon from said stem, said vaporizing being extended across the vaporizing chamber, means for admitting air to the vaporizing chamber below the vaporizer, and means for discharging vapor from said chamber above the vaporizer.

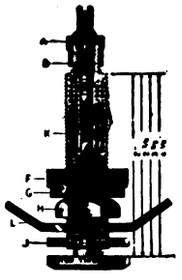
775,753. Vehicle Wheel. William B. Keighley, Vineland, N. J. Filed May 12, 1904. Serial No. 207,637. (No model.)

Claim—1. A wheel tire having a flat base, and an outer elastic tire, having projecting lugs secured to said flat base by means of swinging clips, substantially as specified.

2. The combination, in a wheel tire, of an outer elastic tire having undercut and transversely slotted base portions, a base tire upon which said outer elastic tire is seated, and pivoted and swinging retainers for said elastic tire occupying the transversely slotted portions of the outer tire, substantially as specified.

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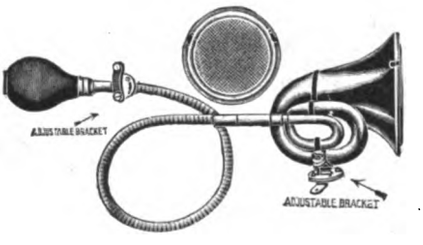
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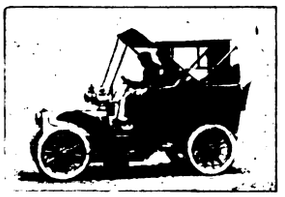
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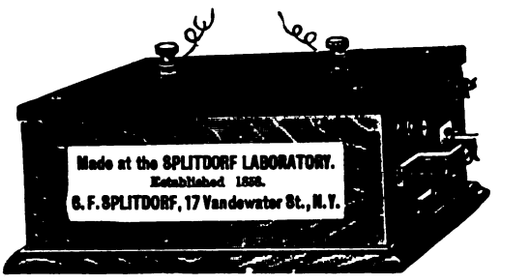
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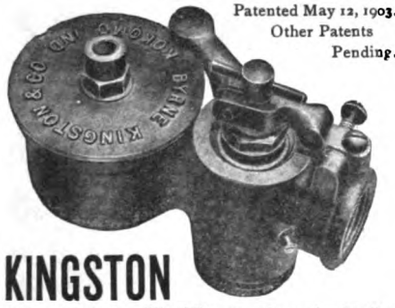
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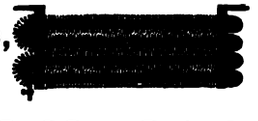
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WHITNEY CHAINS

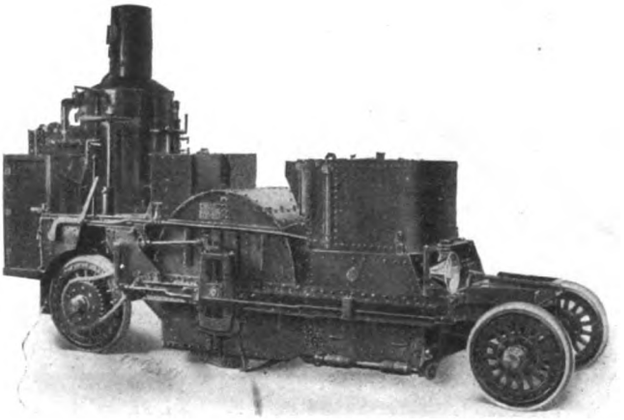
AND STANDARDS

NOW USED ON

"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "CADILLAC" "COLUMBIA"
"CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN"
"GROUT" "GAETH" "GIBBS" "KNOX" "LENAWEE" "MITCHELL"
"MOLINE" "MATHESON" "MANHATTAN" "OLDS" "POPE-HARTFORD"
"PIERCE-RACINE" "PRESCOTT" "QUEEN" "RAMBLER" "STEARNS"
"SOMMER" "SPRINGFIELD" "SNELL" "TOURIST" "WAYNE"
"WORTHINGTON" "WESTERN ELECTRIC"

AUTO STREET SWEEPER

Made by Hartford Motor Machine Co.



DRIVEN BY "WHITNEY" CHAINS.

Watch the Double Chain Drive and see it take the lead for heavy Touring Cars and all Commercial Cars.

AT THE NEW YORK AUTOMOBILE SHOW NOTICE "WHITNEY" CHAINS ON MOST OF THE LEADING CARS.

THE WHITNEY MFG. CO., - Hartford, Conn.

WHITNEY PAT. SEPT. 1904.

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THE *Locomobile* COMPANY OF AMERICA

Member Association of Licensed Automobile Manufacturers.

FACTORY AT SEASIDE PARK, BRIDGEPORT, CONN.

NEW YORK—Broadway, corner of 76th St.
PHILADELPHIA—No. 249 N. Broad St.

BRANCHES

CHICAGO—No. 1384 Michigan Avenue.
BOSTON—No. 15 Berkeley St.

ALL 1905 *Locomobile* GASOLENE CARS WILL HAVE SIDE-ENTRANCE TONNEAUS. Front vertical motors, sliding gear transmissions, automatic carburettors used exclusively. *Locomobile* Gasolene Cars have always been built on lines now considered standard. Nothing untried or experimental. We are in a position to make prompt and early deliveries. Advance folder ready.

15-20 H.P.
$2800

20 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Three-speed transmission. Pressed steel frame. Wheel base, 92 in. Weight, 1800 lbs.

20-25 H.P.
$3700

25 h. p. motor with automatic inlet valves, and jump spark ignition. Three-speed transmission. Channel steel frame. Wheel base, 96 in. Weight, 2300 lbs.

30-35 H.P.
$5000

35 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Three-speed transmission. Pressed steel frame. Wheel base, 106 in. Weight, 2500 lbs.

40-45 H.P.
$7500

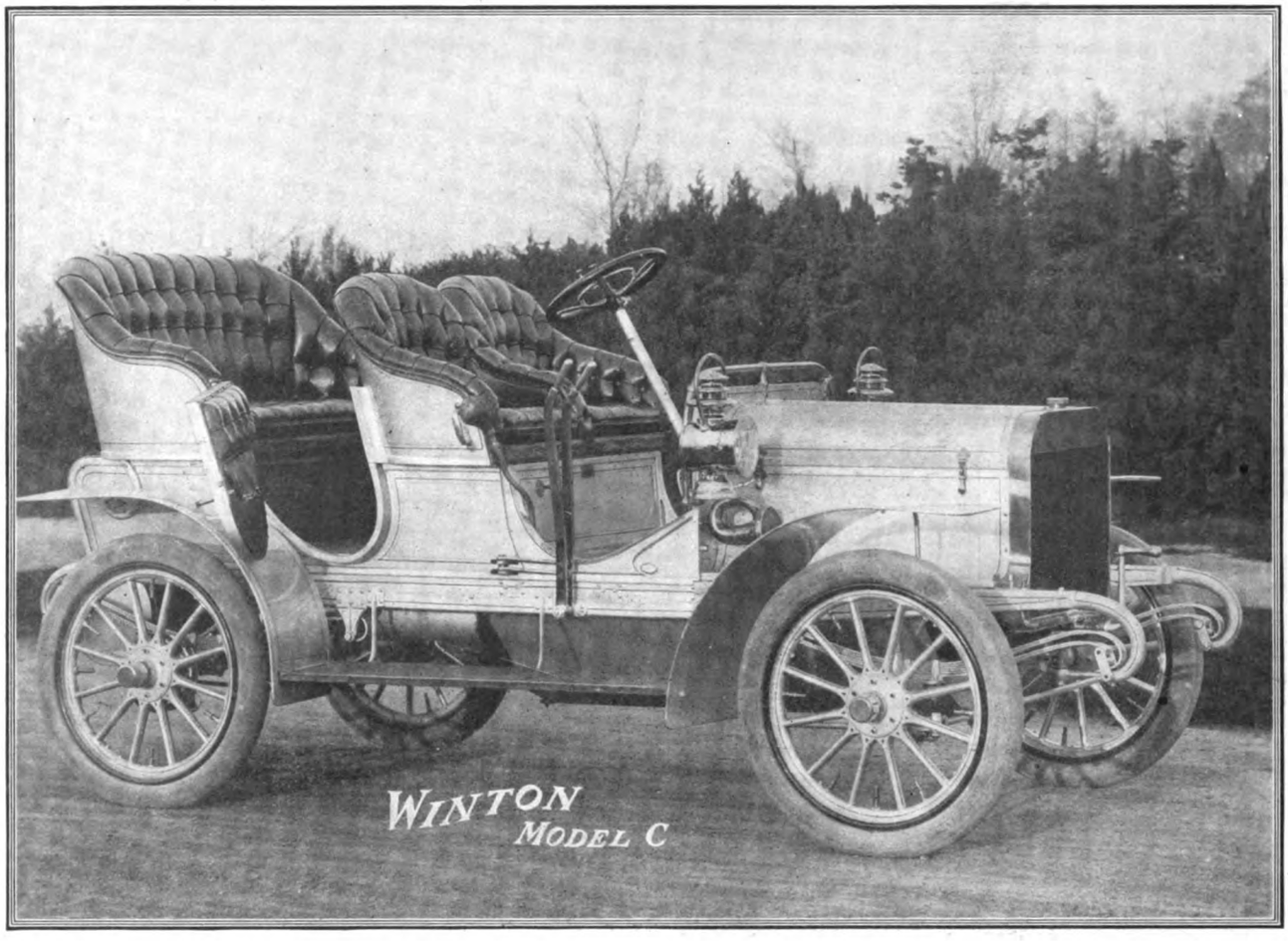
45 h. p. motor with mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. Four-speed transmission. Pressed steel frame. Wheel base, 110 in. Weight, 3000 lbs.



15-20 H. P. *Locomobile* side-entrance tonneau touring car. Price $2,800.00, includes five lamps of best quality, full assortment of tools, accessories and spare parts, all ready for touring. All other models similarly equipped.

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WINTON



EXCLUSIVE ADVANTAGES.

Purchasers of 1905 WINTON cars secure in our new four-cylinder vertical construction **many exclusive advantages.** These features remove previous automobile faults and make motoring safe, easy and inexpensive.

Easy accessibility. Compensating springs. Automatic air governor. Absolutely sure ignition.
Positive, gear operated lubrication. Simplicity, strength and power.

Catalog No. 3, just out, presents the facts and nothing else. May we send you a copy?

Model C, 16-20 H. P., $1800.
Model A, 40 50 H. P., $3500.
Model B, 24-30 H. P., $2500.
Model A, Special, 40-50 H P., $4500.

THE WINTON MOTOR CARRIAGE CO.,

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

POLAR COMPOUND.

Non-freezing. Keeps water fluid at 10° below zero. Will not chrystalize. Not injurious to metal or rubber. One filling lasts all winter. 25 cents per gallon, f.o.b. Cleveland.

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— THAT ETERNAL QUESTION —

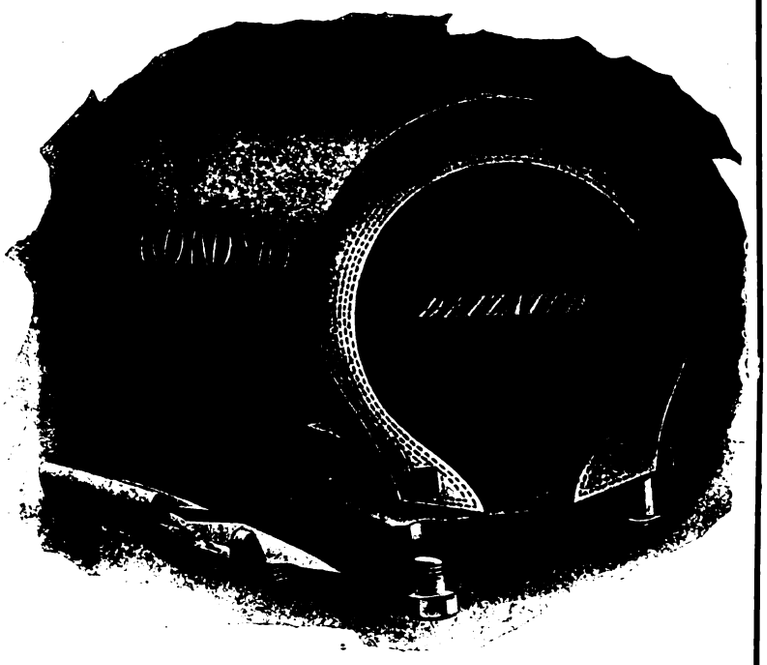
— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

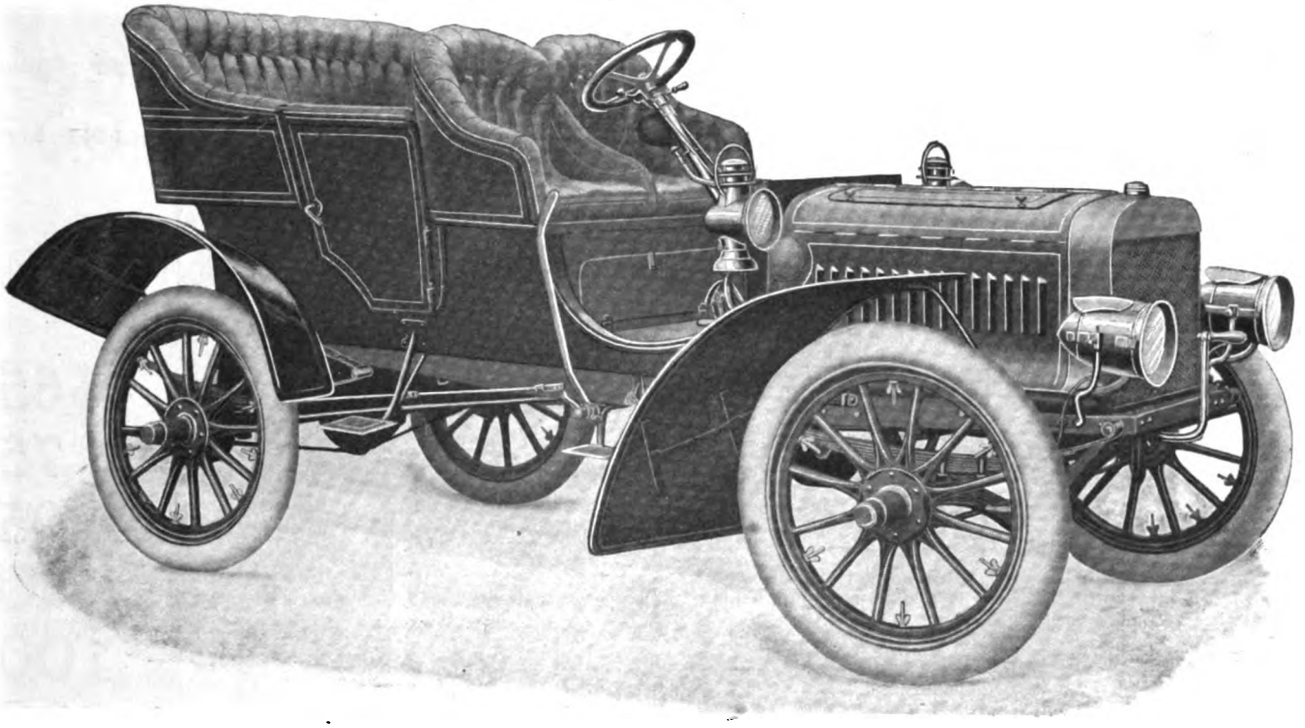
The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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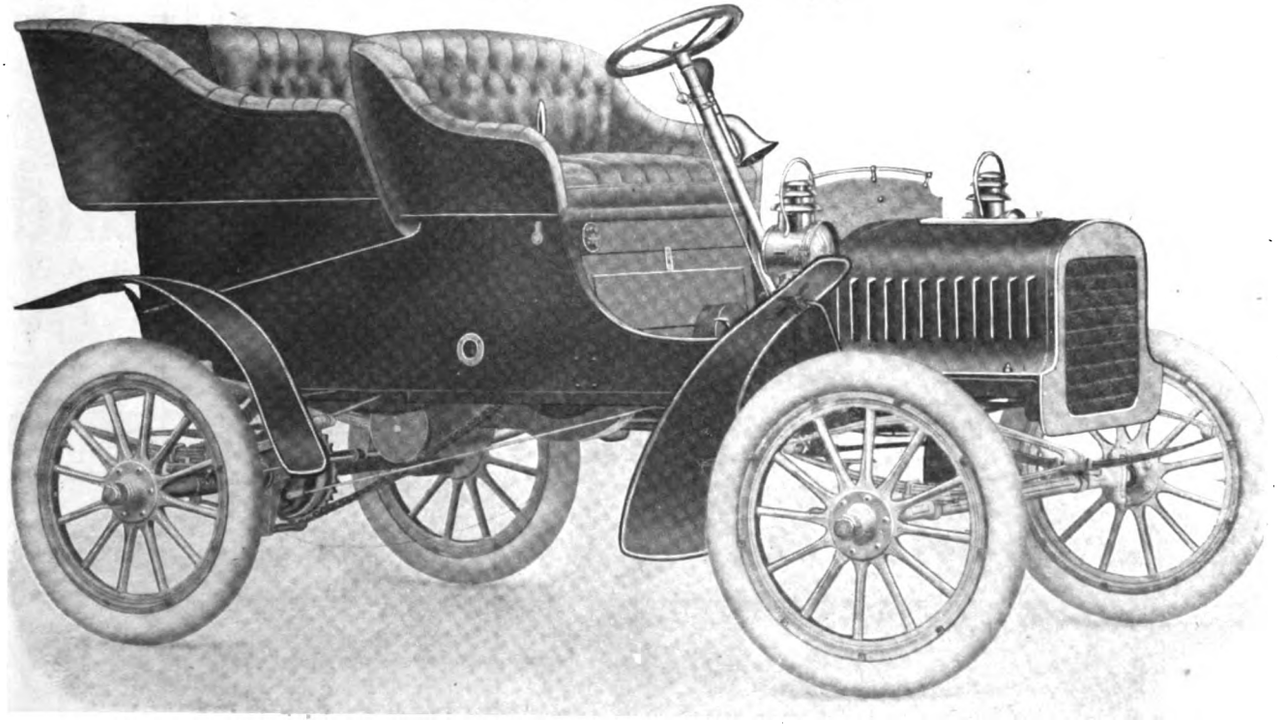
THE RECORD OF THE FORD.

Victory after victory is credited to the Ford light racing car. When you consider that this car gets its power from two of our standard type horizontal motors, you must admit it is proof positive of the correctness of the Ford design and construction for speed, strength and power. The Ford cars have established a record in every day use of consistent reliability and unvarying satisfaction.



MODEL B. Price, $2000.00. Henry Ford's Latest and Greatest Success.

A striking example of the distinctive Ford construction. Weight 1710 lbs. Four-cylinder vertical motor developing over 20-horsepower. This gives our car more power for its weight than any car of equal price in the world. Consequently there is less wear on the tires and ample reserve power for steep grades and sandy roads. Wheel base 92 inches, direct drive with universal coupling, cylinders 4x5 water cooled; automatic oiling devices with force feed, large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car places this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horsepower, planetary transmission, chain drive, and increased gasoline capacity. The most stylish low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. WRITE US TO-DAY FOR FULL INFORMATION.

THE FORD MOTOR CO., Detroit, Mich. See Exhibit, Space G, at New York Show.
JOHN WANAMAKER, Selling Agent for New York and Philadelphia.

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OLDSMOBILE

TO DEALERS:

We beg to announce the most complete line of light automobiles made.

7 H. P. Standard Runabout,	-	-	$650
7 H. P. Touring Runabout,	-	-	750
10 H. P. Light Tonneau,	-	-	950
20 H. P. Touring Car,	-	-	1400
10 H. P. Light Delivery Car,	-	-	1000
16 H. P. Heavy Delivery Car,	-	-	2000

The Standard Runabout is now equipped with a new carburetor. It is good for 30 miles an hour, and eats hills alive. This machine won over all other light cars and beat most of the two-cylinder cars up Eagle Rock Hill Thanksgiving Day. Can ship you a duplicate immediately.

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PROCLAMATION

The new 20 H. P. TOURING CAR will be ready for early January delivery. Has double opposed engines, cylinders 5¼x6, runs forty miles an hour, climbs heavy grades on high speed, has side door entrance, finest upholstery and finishing and is the peer of any $2,000 car on the market. Those who have seen it say it is the ONLY low priced TOURING CAR. This car will sell quick because one demonstration will convince the customer.

Our TOURING RUNABOUT is the car for the fastidious driver. Best looking runabout in the world, speeds along 32 miles an hour and shows no weak heart when climbing a hill. Made three miles at Houston, Texas, on half-mile track, in 5:28.

The LIGHT TONNEAU is better than ever, more power, same good looks and easy riding qualities. In its class is a most popular car.

The 10 H. P. LIGHT DELIVERY CAR has solid tires, large delivery body and is saving money already for every merchant using it. Have sold a large number of these cars and can send you excellent letters of recommendation from users.

The HEAVY DELIVERY CAR will be ready for January shipment. Can build any body for it, and the engine has ample power to take very heavy loads up stiff grades. A ten passenger car with a speed of 16 miles an hour will be ready at the same time.

Immediate delivery now and hereafter on Runabouts, Light Tonneau and Light Delivery Car. Large cars positively in January.

We have a larger line and will be in better shape than anyone else to make immediate shipment during the rush of spring. Next season will be the biggest money maker yet for Oldsmobile agents. In the way of profits, we certainly have the goods to offer. If we are not represented in your territory, you had better get in on it. Write at once for further particulars.

OLDS MOTOR WORKS,

1332 Jefferson Avenue, DETROIT, U. S. A.

Members Association of Licensed Automobile Manufacturers.

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BULLETIN OF

G & J RECORDS

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.
Peerless Green Dragon,
by Barney Oldfield:
9:12 3-5.

WORLD'S TRACK RECORDS,
Peerless Green Dragon,
by Barney Oldfield:

1 mile	0:52 1-5	sec
2 miles,	1:51 1-5	"
3 miles,	2:47 ...	"
11 miles,	10:18 1-5	"
12 miles,	11:15 ...	"
13 miles,	12:12 1-5	"
14 miles,	13:09 ...	"
15 miles,	14:05 ...	"
16 miles,	15:01 ...	"
17 miles,	15:57 ...	"
18 miles,	16:33 ...	"
19 miles,	17:49 2-5	"
20 miles,	18:45 2-5	"

WORLD'S TRACK RECORDS FIVE MILES,
For LIGHT WEIGHT and MIDDLE WEIGHT CARS.
Ford Racer,
by Frank Kulick:

1st	mile,	59	sec.
2nd	"	57 2-5	"
3rd	"	56 4-5	"
4th	"	55 1-5	"
5th	"	55 1-5	"
Total,		4:43 3-5	

WORLD'S 1-MILE TRACK RECORD for LIGHT and MIDDLE WEIGHT CARS.
20 H. P. Ford,
by Frank Kulick,
55 sec.

WORLD'S 5-MILE TRACK RECORD FOR TOURING CARS.
Pope-Toledo,
by B. F. Dingley:
5:09 3-5.

WORLD'S 1-MILE TRACK RECORD FOR TOURING CARS.
Pope-Toledo,
by George Fuller:
1:00 3-5.

WORLD'S 10-MILE TRACK RECORD FOR TOURING CARS.
Peerless.
by Barney Oldfield,
10:50 1-5.

G & J TIRES

SECURE

Another World's Record

B. F. Dingley, driving a Pope-Toledo Car, won the Chancellor Cup Trophy at Los Angeles, making a new world's record for 5 miles for stock touring cars. Time, 5:09 3-5.

The G & J Thread Tires are fast because there is no internal friction. Isn't it perfectly clear to you that this absence of friction means durability too?

Write us for full information.

G & J TIRE CO.

Factory, 549-617 East Georgia Street,
INDIANAPOLIS, IND.

Branch:
429 Wabash Avenue,
CHICAGO, ILL.

Branch:
247 Jefferson Avenue,
DETROIT, MICH.

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The Maxwell



PERFECTLY SIMPLE — SIMPLY PERFECT

The Keynote of Maxwell Construction is Simplicity.

The minimum number of parts have been used, but into each the brain of the designer has put such thought, such study, that a maximum of practical value has been attained in each detail.

The Maxwell has no pump (thermo-syphon). Its crank and transmission case are cast in one piece of aluminum, and the double-opposed motor is so attached that they form a perfect whole. It is unnecessary to lift floor-boards or crawl under the car to get at any of the vital working parts.

The Maxwell, on account of its correct design and perfect workmanship, is exceptionally quiet, easy running and vibrationless. In every quality it is a car that will serve you well year in and year out, a practical car for practical people.

The Maxwell plant cost over $350,000, and has the most complete equipment of automobile machinery in the world. It is *not* an assembling plant, but one where every part of the Maxwell Automobile is actually made under the direct supervision of its designer, Mr. J. D. Maxwell.

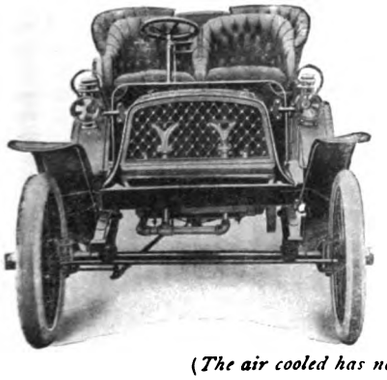
This concentration of energy under one roof puts us in a position to promise our customers that promptness of delivery and absence of red tape that so often hampers the agent in making sales.

Although a new firm, the Maxwell-Briscoe Motor Co. is old in experience. Both Mr. Maxwell and Mr. Briscoe have been closely allied with every improvement in construction since the invention of the automobile. For twelve years they have been steadily working toward the completion of this car. Everything that patience, brains, and capital can do, has been put into its construction—the result is perfection.

Write us for information.

MAXWELL-BRISCOE MOTOR COMPANY, - - Tarrytown, N. Y.

The Quality Car
PREMIER



With 1905 deliveries daily leaving our old plant, our new plant practically ready for occupancy with a doubly increased output, and nothing carried over from last season but a *long* list of contented and satisfied agents and drivers, we start the Premier on its 3d successful *year!*

(*The air cooled has no season*).

Our rush has started. Yours will soon begin. Think now and write us,

Premier Motor Mfg. Co.

INDIANAPOLIS, IND.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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AN INTERESTING AGENCY PROPOSITION,

EMBRACING THE

Easiest Selling Line of Automobiles Ever Manufactured, will be unfolded to Live Automobile Dealers for the Season of 1905.

The agency for the ACME { Vertical engine, Ball-bearing sliding gear transmission, Long wheel base, Side entrance,

Will be a valuable acquisition next year. Better write before closing.

ACME MOTOR CAR COMPANY, - - Reading, Pa.

Western Distributors: DEVLIN & COMPANY, 1407 Michigan Avenue, Chicago, Ill.

THE MICHIGAN

LIGHT TOURING CAR FOR 1905

WILL CONSIST OF TWO MODELS, "D" AND "E"

Both will be equipped with the Michigan 2-cylinder 14-H. P. motor, which has proven so satisfactory the past season. Model D will have a removable tonneau and rear entrance, Model E a stylish side entrance body of very swell handsome design. Both have French bonnets, expanding hub brakes, and many other excellent features. Prices reasonable.

New catalog will soon be ready. Send in your name. Write for agency.

Michigan Automobile Co., Makers,

KALAMAZOO, MICH.



Your
SPECIFICATIONS
for
FORGINGS

should reach us promptly to insure
Seasonable Deliveries.

ARE YOU READY?
WE ARE.

THE BILLINGS & SPENCER CO., Hartford, Conn., U. S. A.
Makers of
Drop Forgings of Every Description.

KNOX WATERLESS COMMERCIAL CARS

A CONVINCING LETTER.

BOARD OF DIRECTORS,
BRINKS C. C. EXPRESS CO., City.

Gentlemen:—Below please find report of the Waterless Knox Gasolene Express wagon that we have had in use for 12 days and 12 nights. Eighteen hours divided into two shifts of 9 hours each, covering 150 miles per day of two shifts between Evanston, Oak Park and Woodlawn, and making between 6 and 8 trips during that time, not missing a schedule trip except one trip of two hours, when an electric car ran into the auto, dishing one wheel.

The machine used 20 gallons of gasolene a day of two shifts, or about one gallon for each hour run. When we put this machine on we laid off three wagons, twelve horses, and they have been off during that time, the horses being used elsewhere in the business. We used two of the men on the auto and dispensed with the services of the other man.

By an investment of $2,450 for this Knox machine we can improve deliveries in our business, get better service and save the cost of feeding above horses, one man's wages and the investment in the future of three wagons, harness, etc. We recommend the purchase of said auto.

Respectfully submitted,
A. P. BRINK, General Mgr.
Superintendent, W. B. WYNE.

CALL AT ANY OF AGENTS FOR A DEMONSTRATION.
Selling Agents in all principal cities.

IF YOU WANT SERVICE, BUY A WATERLESS KNOX.

KNOX AUTOMOBILE COMPANY, Springfield, Mass.
Members of Association of Licensed Automobile Manufacturers.

Will exhibit at the Automobile Show, Madison Square Garden, New York, Jan. 14th to 21st, 1905.



"CRANE" CAR
WITH PORTABLE TOP

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THE 15 HORSE POWER **WHITE**

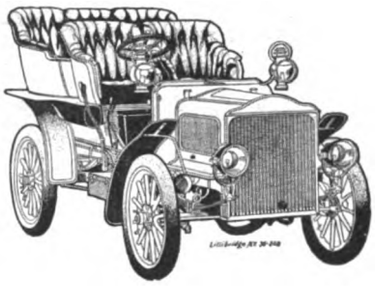
CLIMBED **Eagle Rock Hill,** ONE MILE

IN 1 MINUTE 23 3-5 SECONDS,

DEFEATING ALL OTHER AMERICAN-MADE CARS.

"The performance of Webb Jay in a fifteen horse power White Steam Car compares favorably with that of the winner, Bernin, in a sixty horse power Renault whose time was 1 minute 20 seconds. The winner was a racing car of high price, while the steamer was a stock car listed at $2,500"

—N. Y. Herald, Nov. 26.



WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.

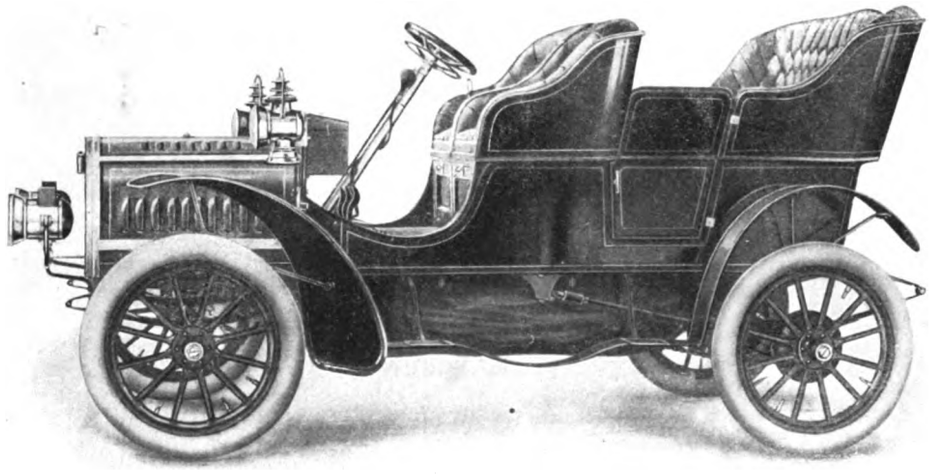
Haste Makes Waste.

Don't be in a hurry to place your order for 1905. Wait until you have seen the new ORIENT cars; there are some things about them that will surprise you. Write us now so that we can send you photographs and keep you posted. You want the latest and best and we have it. "Any old car" will not sell this season, they must be up to date. It will not cost you much to write.

WALTHAM MFG. CO., Waltham, Mass.

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Rambler



SURREY, TYPE ONE. 1905 Model.

2 CYLINDERS, 16 H.P., $1350. IMMEDIATE DELIVERY.

Thursday afternoon, October 13, Arthur Gardiner, whose name was formerly well known on the cycle track, and who now is final tester of every RAMBLER car made, drove the writer in a new Surrey, Type One, for a twenty mile run about Kenosha. The country is perfectly flat, and the black soil makes poor roads, deeply rutted, so that this high speed run furnished no hill climbing, but plenty of spring and power testing, as a narrow, deep rut made by farm wagons in soft roads pinches pneumatic tires, and tests the springing by side crooks. Part of the time the car had four passengers and part of the time it was on very bad, soft, muddy, uneven roads, always riding very smoothly, without the slightest tremble of the free front ends of the mud guards, which is most convincing proof of entire absence of vibration, and always with abundant power to spare. The car is as still as it should be, silencing perfect, no bouncing, easy side swing, and prompt response in every particular of control.—HUGH DOLNAR, page 86, *et. seq.* *Cycle and Automobile Trade Journal*, November, 1904.

We shall be pleased to send you a copy of THE RAMBLER MAGAZINE, and other printed matter, free, upon request.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 304-306 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

NEW YORK AGENCY, 134 West 38th Street. REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, December 8, 1904. No. 11

WILL LOOSEN PURSE STRINGS

N. A. A. M. Plans Expenditures for Many Purposes—Parts Show Receives Scant Attention.

Although they came to yesterday's meeting at New York headquarters fully primed on the subject, by a six or seven-page typewritten letter giving reasons why a separate show of parts is necessary or desirable, the thirteen members of the executive committee of the N. A. A. M. who were present made short work of it when it was brought up for action. It did not come up until very late in the afternoon, and evoked little, if any, discussion. Instead, it was promptly referred to the show committee "for detailed consideration," as the secretary expressed it. It is stated, however, that the idea of a parts show did not meet with the unanimous favor that was supposed would be the case.

In many respects quite the most important action of the meeting was the recording of a motion favoring the institution of a test case to determine the legality of those laws requiring automobilists to register and carry license tags. A committee to confer with counsel and outline the best mode of procedure and to select the battlegrounds was appointed and will render a report at the next meeting. As the counsel of the association had previously given as his opinion that such laws were unconstitutional, there seems small doubt but that a test case will be undertaken. It will be fought to a finish, too.

A committee was also appointed to investigate the present status of the Brownlow bill, which makes for Federal aid in road improvement, and also the status of good roads movements generally. This committee, likewise, will report at the next meeting.

A contribution of $500 to help to defray the deficit of the Vanderbilt Cup fund was voted.

It was voted also to abandon the annual banquet and to promote instead a smoker and entertainment on a large scale on Friday of the New York show. The idea is to hold a general entertainment and jollification, which may be participated in by agents not less than manufacturers. The annual meeting of the N. A. A. M. will be held on Wednesday of the same week.

Meteor Falls Into New Hands.

W. L. Colt, sales manager of the Federal Mfg. Co., has resigned that position to become the head of a new company, the Cleveland Motor Car Co., which has been formed to market what has been known as the Meteor car, heretofore sold by the Worthington Automobile Co.

As a section of the trade has been aware, the Meteor was constructed by the Federal Mfg. Co. for the Worthington people, but, as the Federal Mfg. Co. were not inclined to enter the market as manufacturers of complete cars, the new company is the direct result. The Cleveland Motor Car Co. will have headquarters in the city from which it takes its name.

Two Quit in New England.

Two New England concerns are in process of liquidation, the Pope-Robinson Co., Hyde Park, Mass., and the Crest Mfg. Co., Cambridge, Mass. The former, as The Motor World stated two weeks since, have disposed of their Selden license to the Buick Motor Co., Flint, Mich., and the winding up of the concern is the direct result.

The Crest Mfg. Co. have been on financial shoals during the year, and for some time its future has been problematical. A "for sale" sign on the factory at Cambridge, however, seems to settle all doubts on that score.

Exports Regain Strength.

After an interregnum of two months, when losses were recorded, the exports for October show the usual gain. The figures are $130,891, as compared to $119,131, in October, 1903. For the ten months of the fiscal year the figure are $1,576,877, as against $1,311,960 in the corresponding period of 1903, and $970,610 in 1902.

Snell Changes Name.

The Snell Motor Car Truck Co., of Toledo, Ohio, has changed its name to the American Motor Car Truck Co.

DON'T FAVOR PARTS SHOW

Accessory Makers Express Dissenting Opinions—Busy Session of M. & A. M. in Cleveland.

Cleveland, Dec. 3.—While it did not come before them officially or for action, the suggested parts show—exclusive mention of which was made in last week's Motor World—was freely, if informally, discussed by the directors of the Motor and Accessory Manufacturers at their meeting here to-day.

It cannot be said that they are whole heartedly in favor of the idea. The prevailing sentiment seemed to be that while such a show might prove an excellent thing for purely parts makers and makers of commercial vehicles, it would not appeal specially to makers of accessories, inasmuch as the latter are almost as intent on reaching the public as they are on reaching the trade. As one of the directors expressed it: "The parts show, if brought about, would simply require that the makers of accessories be subjected to additional expense without adequate returns, because, even if they exhibited at the parts show, they would still desire to be well represented at the automobile exhibitions. It would impose a burden of two or three shows, instead of one or two, as at present."

Those present at the meeting were President D. J. Post, H. E. Raymond, W. S. Gorton, Harry T. Dunn, R. H. Welles, F. E. Castle, H. S. Chapin, V. E. Apple and P. Hussey.

While it had no reference to the matter, the M. and A. M. took action that will facilitate consideration of the parts show in the event that the National Association of Automobile Manufacturers should elect to favor such a project—that is, they appointed a permanent committee of five, with H. E. Raymond as chairman, to confer with a similar committee of the N. A. A. M. on all subjects of mutual interest which may arise from time to time.

There was also appointed a committee to see that the M. and A. M. exhibits receive their due share of attention at the New York Show. Among other things, the committee will arrange for the display of suitable signs

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directing the throng to the restaurant and balcony, where the accessories exhibits will be displayed.

At to-day's meeting the following concerns were admitted to membership Utility Mfg. Co., New York; Wheeler Mfg. Co., Detroit, Mich.; Long Mfg. Co., Chicago, and the International A. and V. Tire Co.

Incidentally, the directors issued sanctions for the Detroit and Cleveland shows.

It was voted to hold the next annual meeting of the organization on January 13, 1905, at 8 p. m., at the Astor Hotel, New York.

Woman Blocks Fox's Way.

The situation following the falling out of Frank A. Fox with the Eisenhuth Horseless Vehicle Co. has almost a comic opera aspect. Fox, as was exclusively stated in last week's Motor World, entered suit against the company for $8,000 for alleged breach of contract, and promptly attached what is supposed to be the only Graham-Fox compound car which the company had succeeded in producing in about a year's time. When Fox woke up, he discovered that Miss Mary G. Read, the secretary of the company, had previously attached the property on a claim of nearly $25,000, and, following Fox's action, she promptly replevined the car, and the case is made returnable for the first Tuesday in February next. Miss Read, Fox's attorneys claim, gave a bond for $4,500, the soundness of which they question. Accordingly, they have made a motion that a new bond be substituted, and this motion will be argued on December 29.

The car is now in the possession of the Sheriff, and the Eisenhuth company are in a considerable stew, as they desire very much to get hold of it in order to display it at the New York show. As it is the only one in sight, they must get it or they will be numbered with the absentees.

Buick Selects Sales Managers.

Charles Van Horne, who was for many years the sales manager of the Gormully & Jeffrey Mfg. Co., when its Rambler bicycle was in its heyday, has been appointed sales manager of the Buick Motor Co., of Flint and Jackson, Mich. That he brings to the position a ripe experience goes without saying, and it may be added that he is an uncommonly conscientious gentleman. In the East H. J. Koehler, the well known dealer in New York and New Jersey, will act as assistant sales manager. From Newark he will handle a goodly share of the Buick territory in this part of the country.

Takes On the Thomas.

The Autovehicle Co., of Newark, N. J., has closed with the E. R. Thomas Motor Co. to handle the Thomas line in 1905. Manager George Paddock went to Buffalo last week and closed the deal, paying a deposit on an order for twenty cars. With the Olds and the Thomas the Autovehicle Co.'s. line is complete.

ABUSING THE GUARANTEE

Replacement of Parts Leads to Some Despicable Tricks by Unscrupulous Dealers.

"Of all the mean tricks I ever came across the worst is that played by some utterly unscrupulous and inherently depraved people, who play hocus pocus with parts sent them by makers under guarantee. The lengths to which some of them go is almost inconceivable," said the manager of one of the Eastern branches of a big manufacturer to a Motor World man recently.

"It is no more or less than downright stealing, in the first place; and it frequently causes complications and no end of trouble. Furthermore, there is more of it done than you will readily believe. It must take a lot of nerve, combined with an utter lack of conscience—and most of us have a little of the latter—to bring a man to the point of perpetrating a double fraud, as he does when he gets a part from a maker free under a guarantee, and then sells it to an unsuspecting customer, who is entitled to the part without charge.

"I have one agent; or, rather, ex-agent, for he no longer represents us, who, I am convinced, made a regular practice of 'doing' us by selling the parts he got from us under guarantee. But he was very slick, and we never could catch him "with the goods on," at least not until his connection with us was ended.

"The worst thing I ever knew this man to do came to our notice not long ago. The home office sent me a letter from a man in Northeastern Pennsylvania, ordering a certain part. We sent it, and got back word that it would not fit. In ordering he had merely given the model number of his car, so I wrote him for the number of the car itself. Back came word, and then I wrote him again, saying that if his car was No. So and So, the part we had sent him would fit, and that I would stake my word on it. By wire came word that it didn't fit, or come anywhere near it, so I knew there must be something wrong, and jumped on a train and went over there.

"On the way over I got to thinking about the matter, and I build up a theory about it. The theory was that there was something wrong about the number. What it was I didn't know, but I connected my suspicion with the fact that the place where our customed lived was the territory of the agent I have mentioned, and felt that there was some queer game up. Sure enough, the instant my eyes fell on the car I was 'on.' Instead of being the car the number given indicated, it was an entirely different model. Yet the number plate was there; of that I satisfied myself.

"A little conversation with the owner enabled me to see through the matter. The dealer had in some manner got hold of an extra number plate, and when the customer came along and wanted that model car, he, being out of it and having another model of a somewhat older date, had simply changed the plates and foisted the old one on him at the price of the new one.

"But that was not the worst of it. This same dealer had received from us a short time before an entire new engine, to replace one that had developed some defect, and was not exactly as it should have been. Rather than have a dissatisfied customer we had replaced the engine free of charge. Would you believe it, the agent had put it in this car and made the owner pay full price for it! There was a situation for you. And yet that dealer is handling several reputable lines of cars and poses as an honest man."

Plainfield Garage in Trouble.

An order was secured in the Court of Chancery at Trenton, N. J., last week, directing that the Plainfield Automobile Garage show cause why an injunction should not be issued and a receiver appointed to take charge of all the property of the defendant. The complaint is made by Andrew H. Wilson, who claims that he owns five shares of the capital stock of the company, and that the company is indebted to him for moneys loaned in the sum of $1,467.75.

The complainant alleges that the liabilities of the company amount to over $2,400, while the only assets are a book account of $138; office fixtures worth $500 and tools and machinery valued at $450. It is alleged that the company is hopelessly insolvent, and has no funds with which to carry on its business.

The order carries with it a temporary injunction restraining the company from transacting any business pending the litigation.

R. F. Von Minden, counsel for William B. Smith, said that as to the direct cause for the bankruptcy he preferred to remain silent for the present. Smith, Andrew H. Wilson and Charles H. Thornton are the stockholders. The company will not be reorganized.

Smith is a brother of Mrs. Charles L. Fair, who, with her husband, was killed in an automobile accident in France about a couple of years ago. He recently received considerable money from the estate, and invested a portion of it in the Plainfield concern.

Royal Enters New England.

The Royal Tourist is preparing for no ordinary reign in New England next season. The first step in that direction is the consummation of arrangements with the New England Automobile Co. for the handling of the well known Cleveland car. The New England Automobile Co. will be centrally located in the thick of Boston automobiledom at No. 182 Columbus avenue, in the store long occupied by George J. Dunham, who will be the manager. The initial order which secured the agency is understood to have been a plump one, and other plans are now afoot which seem to assure that the Royal will prove very much a factor in the New England States during 1905.

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NEW YORK GARAGE GUTTED

Fire of Uncertain Origin Causes Big Loss—Firemen Use Axes on Tires.

What proved to be the first fire of moment in a New York City retail automobile establishment broke out at 1 o'clock last Monday afternoon in the garage of the Standard Automobile Company, at 146 West Thirty-ninth street. Thirty cars were burned, entailing a loss estimated at $150,000. Twelve of the burned cars were not insured. The only one of the cars in the garage at the time which was saved was the machine belonging to Mayor McClellan, which was pushed out by hand.

Every effort to trace the origin of the fire has failed. Cigarettes, sparks from an ignition device and others have been advanced as the cause, but the most plausible is that some loose gasolene on the floor came in contact with blazing coals that had fallen out of the heating furnace, which, as there was no basement, was in the rear of the garage.

The first man to discover the fire was the driver of a gasolene wagon belonging to the Valvoline Company. He had driven into the building and had attached the flexible feed pipe from the storage tank to his wagon. He heard a crackling sound behind him, and when he turned saw a sheet of flame coming from the rear of the building. He did not have time to uncouple the feed pipe, because the fire was so near, but drove the wagon out of the building, the coupling being broken and a stream of gasolene following the wagon out of the place and over into Seventh avenue. This gasolene caught fire from the flames in the garage and a stream of fire trailed the wagon until the driver jumped off the seat and smothered the flame with his coat.

The building was of two stories, and the eighteen men on the upper floor were all forced to jump from the front windows to save themselves. Eight of these men received injuries, two of them having broken arms or legs and internal injuries. The seven cars which were on the upper floor were totally destroyed, as was a motorcycle, which had been built by C. O. Snyder, superintendent of the repair department. One of the cars was the racing machine which Peter Cooper Hewitt had built as a candidate for the American team in the James Gordon Bennett Cup race this year, but which was not completed in time. M. C. Hermann lost two Panhards of 24 and 70 horsepower, but both were insured.

There were quite the usual number of wild stories regarding explosions, but Fire Chief Croker said to a Motor World man: "The only explosions that I could find any evidence of were the gasolene tanks of two of the machines that were on the upper floor. Some of the tires of the machines on both floors exploded from the heat, but that was all. There was no evidence that I could find that an explosion caused the fire."

When Manager R. H. Weaver, of the garage, went to the building after the fire to let the water out of the tanks of the machines to prevent them from freezing, he was denied access to the place. He had to obtain permission from the chief inspector of the department before he was allowed to enter the building and empty the tanks. Many of the tires on the cars were chopped open by firemen in spite of Weaver's remonstrances. One fireman said he had been ordered to chop open all of the tires, as many of them were in flames.

Louisville Concern in Straits.

In spite of the fact that E. R. Thomas, the millionaire motorist of this city, was a large stockholder and a brother-in-law of the executive head of the concern, the Motor Vehicle Co., of Louisville, Ky., is in the hands of an assignee and its business will be wound up. The deed of assignment, naming J. S. Tracy as assignor, was filed last week. While no list of assets and liabilities is yet obtainable, it is stated that they are equal.

The concern has done a large business in automobiles of all descriptions, and attributes the enforced suspension to the fact that a great amount of capital has been tied up in the most expensive cars, numbers of which have remained on hand and have deteriorated.

The stockholders are R. Wortham Otter, of Louisville, and Edward R. Thomas, of New York. Assignee Tracy is Thomas's representative, and was agreed on as assignee by both Thomas and Otter.

The Motor Vehicle Company was established by Otter and J. Kemp Goodloe and Thomas, who is Otter's brother-in-law, purchased stock when Goodloe dropped out.

Five Exhibitors Get More Space.

Five of the exhibitors in the New York hsow have been made happy by increases in the size of their respective spaces. The "fortunate five" are the Winton Motor Carriage Company, E. R. Thomas Motor Company, Haynes-Apperson Company, Knox Automobile Company and the Olds Motor Works. The first four fell heir to the space declared vacant by reason of failure to qualify of the Crest Manufacturing Company, Black Diamond Automobile Company, Automotor Company and Upton Machine Company. The Olds enlargement is due to the courtesy of the Locomobile Company, who tendered a slice off their space.

Caille Completes its Car.

The Caille Bros. Co. of Detroit, who are large makers of slot machines, have completed their first car, which will be styled the Du Brie-Caille, in honor of its designer, Stanley N. Du Brie, M. E. It is of the two-cycle type developing 25 horsepower, and is a large, good-looking vehicle, that should claim its full share of notice.

FIGHT OVER FIATS FINISHED

Local Firm Gets Court Decision, and Exposition Cars are Turned Over to Them.

After waiting more than eight months, Hollander & Tangeman, of this city, have obtained possession of the two Fiat cars that were exhibited at the St. Louis Exposition. The curious case was settled last week, and, apparently, in an amicable fashion, after months of litigation, judgment by consent having been given.

It will be recalled that last spring Elmer P. Hollander, of the firm of Hollander & Tangeman, applied for the possession of two Italian automobiles which were on exhibit at the Palace of Transportation at the World's Fair, under the control of Fabbrica Italian di Automobili of Turin, Italy.

The petition claimed that the machines had been paid for by Hollander and were his lawful property. In the meaning of the law the Palace of Transportation is a bonded warehouse of the United States, and property exhibited there is free from duty and may not be removed unless by authority and until the duty is paid.

Hollander alleged that he had offered the amount of the duty to Charles F. Gallenkamp, Supervisor of Customs, and that the money had been refused, because the plaintiffs were not the consignees of the machines. As the machines were in the custody of Gallenkamp for the duty, he was made a defendant in the case, as also were the Louisiana Purchase Company and Giovanni Branchi, the agent for the Italian manufactory, who had the machines in his charge.

The cars were brought to America on March 31, and were received by Branchi, who placed them in his exhibit at the World's Fair without the consent of the owners.

A claim of $1,000 damages was put in by Hollander against the Italian company for holding the machines. The petition stated that he had made several applications for the possession of the machines, and that he had suffered in that amount by not having them. A further claim of $7,000, the value of both machines, was asked in case the machines were not delivered.

The plaintiffs paid the costs in the suit and the duty on the automobiles. United States Marshal Morsey removed them from the Transportation Building, and turned them over to Hollander.

Gallaher Loses His License.

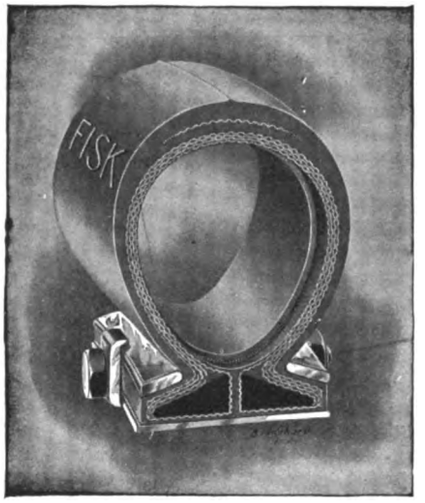
E. B. Gallaher, New York, is no longer a member of the Association of Licensed Automobile Manufacturers. His Selden license was revoked last week because, it is understood, of nonpayment of royalties. During last year, Gallaher, who filled many roles in the trade and whose career has been marked by considerable nimbleness, handled the Richards-Brasier car. His was merely an importing license, to which some history is said to attach.

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The Slam-bang Driver.

During the present period when the manufacturers of automobiles are making machines faster than decent drivers can be educated, the manufacturer has to suffer financial loss, and because of some circumstances quite beyond his control.

Many of the drivers buying cars do not realize, for instance, what tremendous power they are handling. They start their cars suddenly and stop them suddenly. They apply the clutch so suddenly that the heads and backs of the people in the wagon are seen to snap disagreeably. The driver himself does not seem to notice it. In the first place he is prepared for the shock, as he is in the habit of starting in that way. Then it seems to be a fact that the driver who has this habit does not mind little things like this; he seems to think it part of automobling to be yanked around roughly. He has no delicate sense of touch or feeling apparently, and the machine's occupants have to suffer.

It is common practice in engineering to calculate a machine that is going to stand sudden blows by impact at double the strength of a machine that would not be strained in that way. It is a fact that a careless driver will throw double the strain onto the parts of his machine that a careful driver will put on it under the same circumstances. To be sure, the machine is made to stand three or four times what is absolutely necessary, but this does not mean that this same machine will last as long and give as good satisfaction when submitted to sudden strains continually as it will when treated properly. It simply will not do so.

There is little use preaching on this subject because a driver who has not the right touch in the first place will hardly acquire it through any amount of advice. He may get it pounded into him after paying repair bills and shifting around from one machine to another in hopes of finding one that will stand the kind of treatment that he gives a machine. Experience will show him that all machines can be smashed if abused. Then he may listen to reason and be willing to believe that his treatment is not good treatment.

The Deposit System.

In the increasing eagerness to dispose of factory outputs there is apparent a disposition in some quarters to modify or abandon altogether the agent's deposit system. This was at one time strictly adhered to almost universally, and even now it is the prevailing custom. The dealer who makes or renews a contract to handle a certain make of car in his territory binds the bargain by making a deposit in cash, which is nothing more or less than a payment on account of the cars ordered. It is, therefore, more than an evidence of good faith on the part of the purchasing dealer; it helps, even though in small part only, to pay the cost of production and does much to assure the maker that the cars ordered will be taken and paid for.

A policy of this sort is replete with pros and cons. Automobiles run into money at a tremendous rate. Half a dozen even of the cheapest stand for several thousand dollars, and twenty-five cars cost the maker tens of thousands of dollars and months of time.

It is only natural, therefore, that he should want some positive assurance that his product shall be accepted and paid for when it is completed and ready for delivery. It is not sufficient that a dealer shall possess a fair rating in the commercial agencies, or that his order is a bona fide one. His money may take wings or become tied up, or the inclination to carry out his contract may no longer exist when the time comes to carry it into effect. The deposit forms the link that binds the maker and the dealer together and makes it reasonably certain that they will jog along together amicably, at least during the life of the contract.

The amount of the deposit is neither too large nor too small. It is seldom over $100 or under $50 per car. If it were more than the former sum, it might render the maker indifferent to the wishes of his customer, as the latter would have too much money posted to regard with equanimity any fracture of the contract or even any strained relations. Viewing it the other way, if the amount of the deposit were to be materially reduced the dealer's stake would be too small, and he might feel at liberty to take strong ground on any subject in which he was interested.

It is obvious, therefore, that the passing of the custom or its material modification would greatly influence trade conditions. Yet, as stated, there are indications that it will not be so strenuously upheld in the future as it was in the past. There are several concerns that no longer regard it as a cardinal doctrine in their policy, and the approaching season may witness accessions to the ranks. Without deposits to bind the contract the contract has little force, and it is the easier entered into by the party of the second part on that account, for he does not have to lock up any money, and if when the time for delivery comes around he has changed his mind about the cars, there is nothing to prevent his declining to receive them. But it is not easy to see what solid advantage accrues to the party of the first part—the maker. He is, it is true, enabled to dispose of his estimated output, quickly and easily—on paper. But he does not know that deliveries will ever be taken, and it is not easy to see how he can count with any certainty on disposing of his product. By overselling largely he stands a good chance of having all the cars he actually turns out taken off his hands, and this is probably the actuating cause in the matter, for a dealer will be more ready to place an order for cars when he is not called upon to make a deposit, and if the dealer can sell more cars than he has paid a deposit on he will very quickly call on the non-deposit ones. It is equally beyond question, however, that if the dealer is caught in a

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bear market—that is, finds his sales falling short of the number contracted for—he will sacrifice the non-deposit cars without the slightest hesitation. In the one case he loses nothing, while if he closes the season with, say, ten cars on which he has paid a deposit of $100 each, in the maker's hands awaiting shipping instructions, he stands to lose $1,000 unless the maker will agree to release him.

It is true that the latter will frequently do this, if he is convinced that the dealer "played fair" and really tried to dispose of the goods he had ordered. But if a car that has no deposit system is pushed instead, the maker of the deposit car is not likely to be in a generous mood.

Owners Not Blameless.

We are so accustomed to viewing the automobile owner as an unwilling and impotent victim of the unscrupulous chauffeur that it will come to many of us as a shock to learn that, in the opinion of many well posted tradesmen, he really holds the key to the situation; that he can do more to bring about a reform of the nefarious abuses that cry to high heaven than any other man. This aspect of the matter, which is treated at length in another column, is new and full of instruction.

An owner who is an unwilling victim of a system of "graft," and who is helpless to restrain the midnight marauderings of his hired man, is one thing; quite another is the owner who supinely permits himself to be despoiled and the public to be annoyed and even put in peril because he will not take the trouble to act. Yet it seems indubitable that he is the latter rather than the former. He can, if he only will, act, either in conjunction with the garagekeeper or with the decent chauffeur, to bring about a sweeping reform. Nor does he need to go to any great trouble in the matter. It is sufficient to back up dealers and garagekeepers who are laboring to eradicate the evils that are so loudly complained of, and who will succeed if they are given the support that they should receive.

Publicity is a good thing and the automobile is receiving its full share of it. But there can be too much publicity—or, rather, of the kind that does harm instead of good—and the unrestrained and vociferous chaffeur has been the medium through which it has received an undesirable notoriety. Not only does this arouse antagonism on all sides, but it acts as a deterrent to tens of thousands of people who would be probable purchasers but for the harrowing tales that journals other than the yellow kind regale their readers with. Alike for the good name of the motor vehicle and the prosperity of the industry, it is necessary to call a halt. United action on the part of owners and the better class of tradesmen will have the desired effect.

Really the automobile world is ungrateful. On three several occasions of late the Motor Age has wandered out on the prairie, and, climbing a stump, has patted its back, pointed a proud finger at itself and screamed like a tin eagle. And yet neither the Chicago nor the Hudson rivers have burst into flame, and no one has heard even an echo of the scream or seen a single hat streaking the horizon. It's a downright shame! Indeed, it is. But if the Motor Age will get from in front of the mirror long enough to scan the first pages of the Motor World for a year or two past, and even as late as last week or the week before, it may discover why its cries have failed to strike responsive chords. The Motor World's "scoops" are so numerous and so regular that they have become a part of its existence. They are not so extremely rare as to require the use of skyrockets or megaphones, nor have they required that publication of the paper be delayed either twenty-four or thirty-six hours in order to obtain them.

Revere Beach, the chief point of interest on the Massachusetts boulevard of that name, is a modified Coney Island. The fact that automobilists are prohibited the use of the highway except during the icebound months seems to suggest rather that the Massachusetts crowds walk in the middle of the road or cannot be trusted to take care of themselves. Automobiles are not barred from Coney Island, and there probably are more women and children there in one week than there are at Revere Beach in an entire season. In fact, an automobile ride—of about half a mile—for "ten cents a ride" is one of the many features of the Island. It is a real snorting touring car, too, and, unlike the fearsome Bostonese, "the women sigh for it, the children cry for it."

It is a significant fact that steel manufacturers are at last awakening to the importance of the automobile industry as a large consumer of steel in a wide variety of forms. So astute an observer as Charles M. Schwab is quoted as saying in a recent interview:

"Here is something that I am investigating just at this time," (indicating a catalogue of automobile parts made of steel.) "I am looking up a plant for making all these fine grade parts for automobiles, chains, gears, etc., and I am going to make every one the best that can be made, with the highest equipment for that sort of work."

It does not take a prophet or the son of a prophet to see that the trade of automobile makers will, ere long, be eagerly sought by steel mills. Indeed, a marked change has already taken place in the attitude of steel making concerns, and, as pointed out in another column, the buyer of automobile steel no longer has to beg mills to take his orders and wait their good pleasure in filling them.

It is interesting, but scarcely surprising, to learn that M. Thery has been busy since his return to Paris explaining why he figured as an "also ran" in his first, and last, essay at track racing in this country. His explanation lacks both point and pertinence, and it can scarcely be regarded as convincing even by his compatriots. It is this:

"French cars are very much superior to American cars. My successive defeats proved nothing at all. With a little training the French competitors would easily beat all American adversaries."

M—m. Yes, perhaps. But it would be wise not to make the training too little. It will be recalled that Thery did a little training at the Empire City track in preparation for the four cornered event in which he was beaten by a long margin in the slowest heat of the three.

If they have not already done so, the automobilists of Massachusetts certainly should have engrossed glowing resolutions of thanks to the Metropolitan Park Commission for their action in permitting automobiles to use the Revere Beach Boulevard during the months of snow and ice, when it is practically abandoned by the general public. Such generous, gracious action in thus permitting the automobilists to use a public highway for which their money helped pay, should not be allowed to pass unheeded. Hung in the office of the Park Commission, the resolutions a few years hence will prove an interesting exhibit of the "witch days" of automobiling in the Bay State, and also of the strenuous fashion in which the descendants of revolutionary stock fought for their rights.

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TOWING PROS AND CONS

Opinions are Divided as to Wisdom of Farming it Out—Its Legal Status.

Considerable difference of opinion exists among dealers in this city regarding the method to be followed in towing disabled cars. Some concerns prefer to attend to this disagreeable duty themselves, as they have in the past, while others deem it the better plan to turn the work over to others and thus shift from themselves the responsibility for the undertaking. There is still a third class which is opposed to towing at all, preferring to make repairs, where possible, at the point where the breakdown occurs.

The matter is receiving greater attention among local tradesmen than has been given it for some time. This is due in part to the decision handed down by a Long Island judge a few weeks ago, holding that the concern doing the towing, and not the owner of the car, was legally responsible for any damage that may be caused either by the towing or the towed car. The case before the court was a suit brought to recover damages caused by Frank H. Croker's racing car, which was being towed to New York after the Vanderbilt Cup race in October last. The suit, which was brought against Croker, was dismissed, the court holding that the plaintiff had recourse only against Smith & Mabley, who were towing the car to their garage.

Among the recommendations made by the Rate Committee of the New York Automobile Trade Association, as exclusively reported in last week's Motor World, is one bearing on this question of towing. Attention is called to the fact that the legal responsibility in case of damage lies with the concern doing the towing, and not with the owner of the car. "In towing customers' cars into your garage you are responsible for any damage inflicted either by the car towing or the machine towed or to either one of them; further responsible for accidents to pedestrians or the public in general and subject to suits for damage if any is inflicted," says the committee. "For this reason it may be stated that ararngements can be made with outside parties for towing if so desired. One member reports being able to make very satisfactory arrangements with the New York Transportation Company whenever a tow is required."

While some of the local dealers are very glad to turn the business of towing over to a concern making a specialty of the business, and thus wash their hands of all responsibility, others are not disposed to view the matter in the same light.

"I am glad the matter has been gone into and the situation made plain, so that the trade knows just what responsibility is being incurred," said one branch manager whom the Motor World man interviewed on the subject. "But, at the same time, we shall make no change in our policy. To begin with, we do not have much towing to do, and when the necessity arises we much prefer to take charge of the job ourselves and bring the car in quietly and without fuss. It is true that we are liable for any damage that may be caused, but as our men are careful and experienced, the risk is not great; certainly not of enough importance to cause us to go outside of our establishment when a case of this kind comes up."

Similar views were expressed by another dealer who was seen. "It can readily be seen, however," he added, "that some concerns will find it to their advantage to act on the committee's recommendation. An urgent case may arise, and at that precise time it may be impossible to dispatch a car and a couple of men for the purpose of towing a disabled car home, and a great deal of inconvenience is saved by simply turning it over to some one else. To be thus freed of responsibility is also a considerable relief, especially in the case of a small dealer, who cannot afford to saddle himself with any big risks."

"We make it a practice to discourage towing," said another branch manager. "Of course, where any serious breakdown occurs, there is nothing to do but bring the car in and have it put to rights in the shop. But many times the trouble is a trivial one and can be remedied on the spot or, at most, in some nearby garage. A good workman can accomplish wonders, especially if he knows before he leaves the shop just what the trouble is. This plan presents the additional advantage of avoiding publicity; it leaves a bad impression on people to see a towed car go by, as it strengthens the belief, so prevalent in some quarters, that automobiles are continually breaking down."

Stoddard Interests in New Company.

The Stoddard Manufacturing Company, the big Dayton, Ohio, implement concern, which has been experimenting during the past year with an automobile, has decided to embark upon its manufacture. With that end in view a separate company, to be styled the Dayton Motor Vehicle Company, will be formed, and to it will be turned over the rights, title and interest in the car. The latter will be styled the Stoddard-Dayton, and will be regularly finished in pearl gray. It has been run in Dayton and other cities for six months past, covering some 12,000 miles and proving most satisfactory. Its noiselessness is a feature that is especially commented on.

A portion of the Bainbridge street plant of the Stoddard Manufacturing Company will be leased by the Dayton Motor Car Company, and the work of manufacture prosecuted there. Special tools and machines have been installed and work will be started immediately. It is expected to begin making shipments in February. As a starter, an order for fifty cars has been booked with the newly organized McDuffee Automobile Company of Chicago.

HOUPT'S EMPTY STORE

Causes that Brought it About and Others that Induced Him to Enter Business.

To be the possessor of a large and handsome but absolutely bare salesroom is not at first blush exactly calculated to make a proprietor feel even fairly happy, yet it has that effect on Harry S. Houpt, who handles the Thomas line in this city. To a Motor World man on Monday he explained the matter.

"It is sort of aggravating to have not even a car to show customers," he said. "But what are you going to do when a man comes in and shakes the money at you—even forces it on you? You can't refuse him when he says that, while he had not intended to buy just now, if he could get this car on the floor he would take it, can you? Now, that is just the way it is with me. The last two cars have been whipped away from me in just such fashion, and here I am without a thing to show.

"I can't complain in the least, however. Since October 1, when I started in the automobile business, I have sold just nineteen Thomas cars. That isn't a bad beginning, is it? The only thing that is worrying me is not having enough cars to sell. My contract with the Thomas company calls for seventy-two cars. They will be sold before the 1905 season is well under way. The worst of it is that I am unable to get any more. I can't increase my order, for the company's output is sold—there are actual bona fide orders in hand for every car the factory can turn out, and no one can get a single car in addition to those already ordered."

Mr. Houpt is a striking illustration of the fascination the automobile possesses for men of energy and the impelling force it exercises on them. A figure of note in the metropolitan building trade, he purchased a Thomas car early last season. So much pleased was he with it that he conceived the idea of becoming interested in it, and entered into negotiation with the Buffalo concern to handle its goods in the metropolitan district. The venture was a success from the start, as Mr. Haupt's wide acquaintance among builders enabled him to interest them in the car, and after that sales were easy.

Death of Famous Drop Forger.

On Monday of this week James H. Williams, head of the big Brooklyn, N. Y., drop forge concern of J. H. Williams & Co., died at his residence in that city. He was fifty-nine years old, and leaves a wife, two sons and a daughter.

Until 1882 Mr. Williams was a member of the firm of Bliss & Williams, now E. W. Bliss & Co., makers of presses and dies. In 1884 he organized the firm of J. H. Williams & Co., whose extensive plant is in South Brooklyn. Automobile forgings are among their productions.

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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

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WEIGHTS AND STRAINS

Steels that do not Best Serve the Purposes—Obstacles that are Being Removed.

Up to the present time builders of automobiles have confined the greater part of their attention to constructing a machine that would run well at all times and in any hands. This has now been accomplished, but entirely, or nearly so, in disregard of the kind of material that went into the machines and the weight of the machines.

It is for this reason that we find a given part of one machine twice as heavy as the same part of a similar machine.

It was noticeable at the last New York show that the vital parts of the French machines were not half as heavy to the eye as similar parts of American machines. There is a good reason for this. The foreigner has given much time and attention to putting the best of materials into the vital parts of his machine.

The weight of a machine, in proportion to the horsepower developed, is becoming more and more an important factor, and is likely to become the talking point with salesmen in the next year or two. Some manufacturers have already realized it, and are pushing this point very wisely.

On a level, the weight of the machine is not of such very vital importance, but the minute hill climbing begins, then every pound of weight counts seriously against the performance of the automobile. On the level a pound is carried along and increases the wheel and road friction but a very small amount. Going uphill it not only increases the running friction as it does on the level, but it takes just so many foot pounds of work to raise it up the hill.

The recent hill climbing contests showed this up very plainly. Unfortunately, it is not possible to give figures that will accurately demonstrate the point in hand, because the exact horsepower developed is not available. Enough is seen at a glance, however, in looking over the list of the competing machines to learn that the machine with the greatest horsepower per pound of vehicle was the winner, all other things being equal. It was noticeable, for example, that cars ordinarily sold as touring cars, with places for four, that were stripped down did far better than the same machines fully equipped as a touring car. It was extremely noticeable that the machines stripped to racing condition did far better than any others.

Of course, it will be said that this is to be expected, and so it is. The manufacturer must remember, however, that results along the same lines can be obtained by using the best of materials and cutting down the weight of the vital parts of the machine without injuring their strength.

There is too strong an idea among manufacturers that steel is steel, and that strong steel is brittle steel. It is hard for them to believe that high carbon steel and nickel steel and special alloys can be furnished by reliable manufacturers that will be two and three times as strong as anything they have used, and yet as tough, if not tougher, than anything they have used. As a matter of fact, it is not always the toughest steel that will stand the strains put upon it in automobile members the best. In fact, it has been demonstrated time and time again that soft steel, like .10 carbon, will not stand repeated shocks and strains as well as the higher carbons, which are not considered as tough.

The crank shaft is a part of the automobile that is called upon to resist alternate stresses under shock to a degree greater probably than any other part of the machine. If the bearings are tight and well adjusted the strains are bad enough; but the moment the crank pin bearings become worn and loose the punishment on the crank shaft is just about the same as though a lot of trip hammers were working at it. Only the very best of material, which has been brought into the best of condition by proper heat treatment, should be used in crank shaft forgings. Design is quite as important, even more so than material; but, assuming that the design is corect and has stood fairly well with the ordinary machine steel picked up in the market, then a crank shaft made from good steel properly treated ought to do three or four times as well and last indefinitely.

On the other hand, if a maker has had no trouble with his crank shaft, using ordinary machine steel, then it is perfectly certain that he can greatly reduce the weight of the crank shaft by the proper use of the steels to be found in the market with a little extra trouble.

There is one difficulty, or rather has been, in connection with a manufacturer obtaining special steels for special purposes. The large steel maker is inclined to turn up his nose at an order for a ton or two of crank shaft steel, or whatever else may be ordered. He may take it, however, and put it through the ordinary order books, and soon it is lost among a multitude of big orders. It may be sidetracked and forgotten, and then, when filled, the man who fills it may not have the slightest idea of what it is going into or of what importance it is, and he may care less. He will see that the order is only for a ton or two and may send any old thing.

Fortunately this condition of affairs is undergoing a change. The steel manufacturers are beginning to see that the automobile business in connection with pleasure vehicles is a big thing, and that the automobile in connection with business purposes is going to be a bigger thing.

It is now possible to get special steels with absolute certainty, and for the manufacturer to be assured that he will get what he asks for and that his order will receive personal attention by a man at the steel works who does nothing else.

Better yet, it is possible to get the special steels in a heat treated condition ready for machining.

It is wise to have the maker of the steel heat treat the forgings, because he has in his employ men who know all there is known of the art, and the best results can be obtained.

Forging companies, too, are going into the heat treatment of steel very intelligently. Only a few days ago tests were made showing an increase of elastic limit between the annealed and the heat treated steel of considerably over 100 per cent; at the same time the steel retained all its toughness and the grain of it was much finer. Fine grained steel is steel that is particularly suited to withstand repeated strains; the finer the grain the better.

This whole question of better materials must be worked to the limit by the manufacturer if he expects to get the best results, and, also, if he expects to get on top and stay there. HENRY SOUTHER.

The Week's Incorporations.

Detroit, Mich.—Rapid Motor Vehicle Co., under laws of Michigan, with $100,000 capital.

Binghampton, N. Y.—Troy Plate Battery Co., under laws of New York, with $50,000 capital. Directors—E. A. Beman, A. C. Rohe and G. C. Bayliss.

Brooklyn, N. Y.—Curtis Automobile Co., under New York laws, with $1,000 capital. Directors—Charles G. Curtis, Van Wyck Curtis and Alice W. Curtis.

Yonkers, N. Y.—Motor Supply Co., under New York laws, with $1,000 capital. Directors—David M. Harvey, William C. Dodge and P. F. W. Ruther.

Washington, D. C.—Cahill Automobile Co., under District of Columbia laws, with $5,000 capital. Corporators—Arthur E. H. Middleton, Frank S. Cahill and William S. Duvall.

Jamestown, N. Y.—Duquesne Construction Co., under New York laws, with $40,000 capital; to make automobiles. Directors—William J. Maddox, Brewer D. Phillips and Frank L. Bliss.

Dover, N. J.—Dover Garage Co., under New Jersey laws, with $10,000 capital; to manufacture and sell motor vehicles. Corporators—Robert A. Bennett, Charles E. Clark and Hiram P. Hall.

Newark, N. J.—H. O. S. Engineering Co., under New Jersey laws, with $25,000 capital; to manufacture and sell electric motors. Corporators—Ferdinand L. Crosley, Gilbert W. Roberts and Oscar Weiss.

Cleveland, Ohio.—D. E. Mars Electric Vehicle Co., under Ohio laws, with $2,500 capital. Corporators—W. O. De Mars, Charles W. Baker, John R. Beakesley, Jr., H. J. Gibbons and A. M. Barnes.

Los Angeles, Cal.—San Joaquin Valley and Coast Transportation Co., under California laws, with $100,000 capital, $5 subscribed; to operate lines of automobiles to transport passengers and baggage, and to maintain eating houses along the lines. Directors—A. D. Laughlin, I. H. Wilmans, T. Forster, Lucius C. Chase and M. Hopkins.

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Duquesne Gets a Fresh Start.

Arrangements looking to a reorganization of the Duquesne Motor Car Company, of Jamestown, N. J., were entered into this week between LeRoy Pelletier, founder and president of the concern, and a number of business men of Jamestown, N. Y., and Corry and Erie, Pa. As a result the concern will be put on its feet, ample capital supplied and the work of constructing the Duquesne car vigorously prosecuted. As a preliminary, the Duquesne Construction Company has been incorporated with a capital of $40,000, and the Motor Car Company will be operated under this charter until a consolidation of the two concerns is effected. It is proposed that the latter company will then be converted into a motor boat and speed launch manufacturing company.

It is also stated that a contract has been made whereby the entire output of the company is purchased by one concern, the American Duquesne Company, composed of Akron, Cleveland, Indianapolis and New York men. The latter concern will act as distributing agents for all American and foreign territory.

The Duquesne is a side entrance tonneau touring car of 16-21 horse power propelled by a four-cylinder, air cooled gasoline engine.

Among the new stockholders are Frank L. Bliss, mayor of Corry, Pa.; W. J. Maddox, of the Maddox Table Co., Jamestown, who will take an active interest in the management; Brewer D. Phillips, president of the Bank of Jamestown; M. R. Stevenson, of the law firm of Wade & Stevenson; M. H. Clark, A. A. Amidon, Charles W. Herrick, George S. Bright, Thomas Crane, Charles J. Anderson, George O. Meredith, Charles J. Jenner, of Jamestown; Fred C. Leary, of New York; Seth Clover, of Erie, and Edward Heuer, manager of the Erie Brewing Company.

Thomas Tries His Six-Cylinder.

The first of the Thomas six-cylinder cars was completed last week and was given a road trial on Saturday. Although the roads were covered with snow and the ground was slipppery, it is stated that the speed indicator registered over sixty miles an hour on several occasions. This particular car will be shipped to Major C. J. S. Miller of Franklin, Pa., who will make his debut at the Ormond Beach Carnival in January, and who will also participate in several other race meets next year.

French Westinghouse Making Cars.

The Société Anonyme Westinghouse, under which title the French branch of the big Westinghouse company does business, has begun the manufacture of automobiles. A 28 horsepower gasolene car has been produced and has been favorably criticised.

Sampson to Build a Factory.

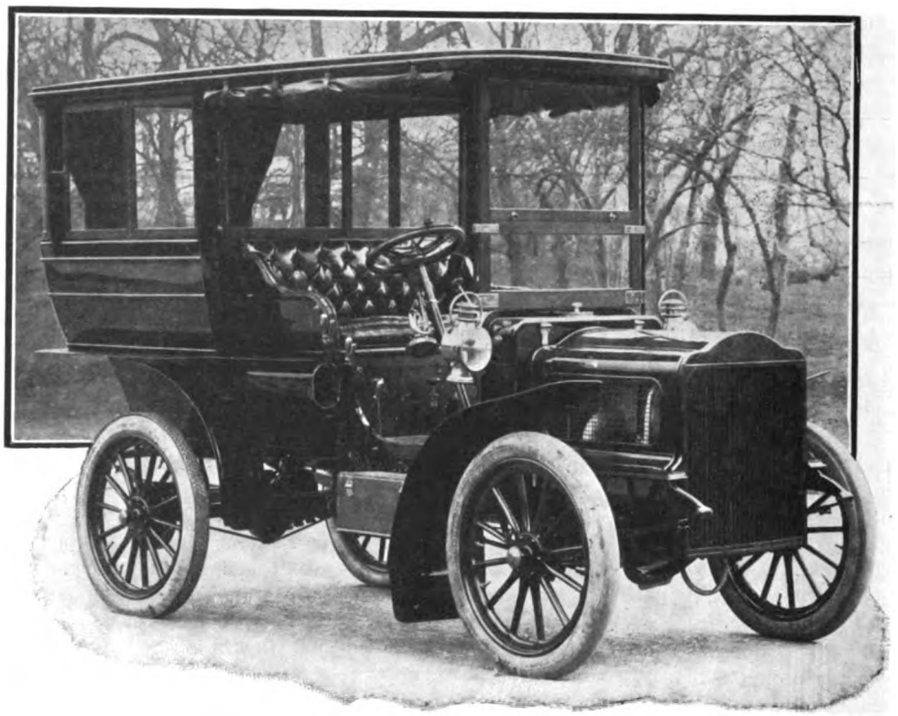
Property at Pittsfield, Mass., has been purchased by Alden Sampson, who proposes to erect thereon a factory to be used in building automobiles. When it is completed he will remove from his present location in the Robbins Shoe Co. Building.

Features of White's Limousine.

A recent addition to the 1905 White line is a Limousine model, shown by the accompanying illustration. The White branch, in this city, has received its first car of this type, and already has booked several orders for it.

With the exception of the body the car is a replica of the regular White 1905 touring car. Two styles of Limousine bodies are made, one permanent and the other removable. The former lists at $3,200 and the latter at $3,350, instead of the $2,500 charged for the standard touring car. The entrance to the rear portion of the Limousine is effected from the back, and the seats, which run lengthwise and facing each other, accommodate four persons. A storage battery under the seats supplies current for an incandescent electric lamp, which gives enough light to read by. A tiny clock, a mirror and various other toilet conveniences are disposed within easy reach.

The front of the car has a removable glass front, and the roof is extended to this glass, so that the driver and other occupants of the seats are fully protected also, except at the sides, which are open.



THE WHITE LIMOUSINE MODEL.

Branstetter Gets the Royal.

The Royal Motor Car Co. have placed their agency for Chicago with the Henry Branstetter Co., which will either build or rent a suitable garage and salesroom. It is certain, at any rate, that the building will be in keeping with the car, and that the sale of the latter will be pushed energetically.

The Fisher Special Manufacturing Company, Cincinnati, has finally taken possession of its new factory. It is a three-story brick building, 50 by 100 feet.

Premier to Have New Factory.

The Premier Motor Mfg. Co., is obtaining its full share of the prevailing prosperity. Evidence of it is rearing skyward at Indianapolis in the form of a new factory that will be ready for occupancy about January 1. This, with ample resources, due to the doubling of the company's capital stock, will render possible a substantially increased output for 1905, for which the demand is not lacking.

Diamond's New Battery Jar.

To their varied products the Diamond Rubber Co., Akron, Ohio, have added the Diamond soft cover battery jar, which is specially designed for use on automobiles. It is constructed with an ⅛-inch wall—3-32 of an inch hard rubber, and over this 1-32 of an inch soft rubber—with a view to easing any shock the jar may receive in handling or otherwise, and keeping the jar whole, even if the hard rubber should become cracked.

Shop Destroyed, Salesroom Saved.

Loss estimated at $3,000 was caused by a fire on the premises of the Curtis Machine Company at Elizabeth, N. J., last week. A lot of automobile parts and the contents of the repair shop were destroyed, but the concern's automobile salesroom was located in a detached building in the rear. This the firemen managed to save.

New Comer in Dayton.

The Dayton Automobile and Rubber Company has just opened a store in the Ohio city of that name. John Rock is president, of the concern, and J. W. Brumbaugh manager. They will handle the Imperial car and carry a full line of tires, making the M. & W. their leader.

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TO CURB THE CHAUFFEUR

The Proposed Law and How It Will Work—Precedent from Connecticut.

Among tradesmen who have given the subject thought there is a growing belief that the passage of a law making it a misdemeanor to use automobiles without the knowledge or consent of the owners is the most practical plan yet put forth to check the abuse that is prevalent wherever chauffeurs are employed. The New-York State Association of Automobile Clubs took the first step toward the attainment of this end a couple of weeks ago at its meeting in Syracuse, when it instructed its legislative committee to prepare such a bill for presentation to the legislature of this State. There is little doubt that a measure of this kind could be put through without any great trouble, so much wrought up is the public at the present time.

As it is now, the owner of a car is almost helpless in the matter. Practically his only recourse is to discharge the chauffeur; the alternative is to bring a civil suit against him for any damage he may have caused—a tedious and uncertain proceeding, with the almost certainty that nothing can be recovered even if the suit is won. Connecticut has a statute covering the misuse of horses, boats and bicycles, but making no mention of automobiles. The law in question is Section 1,232 of the Revised Statutes, which reads:

"Every person who shall wilfully take and use the horse, boat or bicycle or another, without his permission, shall be fined not more than fifty dollars, or imprisoned not more than three months, or both."

There is talk of having this amended so as to include automobiles, but no steps have yet been taken looking to this end.

"At least a year ago I advocated the passage of a State law making the unauthorized use of cars a misdemeanor—just such a law as the State association is preparing," said Manager Percy Owen of the Winton branch to a Motor World man on Monday. "Its passage would put a powerful weapon in the hands of owners, and make a beginning in the work of remedying the chauffeur evil. Until this is done, however, little can be accomplished. Chauffeurs can continue to use their owners' cars to take out parties of friends with impunity, knowing that the most that can be done to them if they are found out is to summarily discharge them. They simply take the chance of not being caught, and if they are they look around for another place and repeat the performance there."

Such a law as this would have the result of "putting it up" squarely to the owner and the garage people to abate, if not to stop utterly, the long list of abuses charged against the chauffeur. With it they could, if they would, inflict summary punishment on any chauffeur who indulged in these illicit practices, and it would act as a deterrant infinitely more powerful than any punitive measures than can now be applied.

Olds's Prices Remain Unchanged.

There will be no changes in the price of Oldsmobiles for 1905. Speculation on that point was set at rest this week, when the Olds Motor Works announced its figures as follows:

7 horsepower standard runabout, $650; 7 horsepower touring runabout, $750; 10 horsepower light tonneau, $950; 20 horsepower touring car, $1,400; 10 horsepower light delivery car, $1,000; 16 horsepower heavy delivery car, $2,000.

The 20 horsepower model is the newest addition to the line. It is the long expected two-cylinder tourney car. It will have a side entrance tonneau and Olds quality will be "all there."

The standard runabout is fitted with a new carbureter, which has increased its power and pace very markedly.

One of the yet unlisted vehicles, a ten passenger car, which will be ready probably in January is a sign of the times and will meet the demand of the scores of stage route promotors, that hitherto, has gone almost unheeded.

Peerless Placed in Philadelphia.

The Peerless agency for Philadelphia, recently relinquished by Banker Bros., has been secured by the Eastern Automobile Co., a new concern, which has just been organized, with temporary offices at 712 Girard Trust Building. The incorporators are: N. E. Brigham, A. B. Cumner, George T. Thompson, H. K. Buck and J. R. Maynes. Mr. Cumner will be the active manager of the concern.

In addition to the Peerless, they will also handle the Stevens-Duryea, and will take on another car to complete their line. They expect to operate a fully equipped garage and salesroom, but are not yet ready to announce the location.

Lear to Handle His Own Car.

The Oscar Lear Automobile Co., Columbus, Ohio, have relinquished the agencies they held during the past year, and during 1905 they will market a car of their own, the Freyer-Mueller, as it will be styled. About fifty of them will be built. They will be of the four-cylinder air-cooled type, the engine being fitted with a blower in front, connected by an aluminum pipe to four aluminum jackets around the cylinders. By this means, air is blown directly on each cylinder.

Lozier Sails for Paris.

H. A. Lozier, president of the Lozier Motor Co., sailed for France on Wednesday morning. He will attend the Paris show and is expected to return to this country about January 4. The Lozier Motor Co. expects to build three or four cars a week for next year's trade. So far as can be learned, they have not yet selected a location for their New York salesroom.

LIGHT ON CHAUFFEUR'S WAYS

Causes that Give Rise to Midnight Carousals and Accidents—Where Responsibility Rests.

Wonder is often expresed that the "hacking" of cars, the wild midnight rides and all the other evidences of chauffeur malfeasance is permitted to go on brazenly and almost openly, month after month without any real, or at any rate, any effective effort to stamp them out. Do the garage keepers or their employes "stand in" with the chauffeurs, or are they simply lax in their methods? Do owners know or care what their chauffeurs do with their expensive cars out of hours? These were some of the questions put to a number of tradesmen by a Motor World man this week, and the replies shed a remarkable amount of light on the matter.

"It is not easy to give a categorical answer to these questions," said one man, whose concern has one of the largest establishments in the city. "You must remember that the automobile industry is a new one and is suffering from abuses and inconsistencies that are liable to affect a business presenting so many and complex problems of does this. At present the responsibility for the chauffeur evil is a divided one. There are three classes sharing the blame for the existence of the prevailing conditions which have done more to bring opprobrium upon the automobile than all other causes combined. There is the garage keeper pure and simple, the dealer who runs a garage as an appendage to his salesroom, the owner of the car, all to be considered. Each has his own special viewpoint and the interests of the three are diverse and frequently contradictory.

"Take our own case first. Our business is to sell cars. The garage is merely incidental and was instituted and is maintained partly because we have the room and the facilities and partly because it is deemed good business policy to run an establishment where our customers can store their cars and have them properly looked after. Naturally, therefore, our interests are identical with those of our customers and there is no reason why we should truckle to our chauffeurs or permit them to put the cars in their charge 'on the bum,' as the very expressive phrase goes in the chauffeur's jargon.

"Now, we have about 100 cars regularly stored with us, all of them our own make. We have a separate storage department, with a superintendent who looks after that end of the business exclusively. Our system for keeping track of cars is very thorough. A record of every car is kept, the time of its out going and incoming, and who has it in charge on each occasion. In nearly every case the owner authorizes his chauffeur to get his car on demand; that is, he is not

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required to have a written or telephonic order.

"When it is requested we send any customer a weekly report, giving in detail the record of his car. But we do this only when it is asked for. We find that most owners are disposed to be easy, even generous with their chauffeurs. If the car is always in when they want it, and is kept in good running order, they seldom ask any questions. Some of them have the utmost confidence in their chauffeurs, and a few even permit them to use the car for their own pleasure; but this is exceptional. Most of them are careless or indisposed to keep too tight a rein on their employes, and the latter have things pretty much their own way.

"There is a better class of chauffeurs in the employ of our customers than is usual, for most of them are recommended by us and are steady, reliable men. Of course, there are exceptions; but we make it a point, for our own protection, to see that our cars are well taken care of, and that necessarily means that the best men obtainable are employed for the purpose. As a result, there is very little 'hacking' of cars, or abuse of any sort. Furthermore, this is a matter that our customers and ourselves can control absolutely if the former will put the power into our hands."

Views of much the same character were expressed by the branch manager of a large Western concern. He went even further in pointing to the car owner as the one best able to put a stop to the abuses referred to; provided, of course, that he stores with a concern not dependent for its chief revenue upon its storage business.

"We keep 'tab' on every car that leaves or enters our garage," he said. "A copy of the record is sent to the car owner every week, whether he asks for it or not. We even go beyond this in our anxiety to prevent the illicit use of cars. If we have reason to believe that a chauffeur is using a car without the owner's knowledge we give the latter a hint. A case of this kind happened not long ago, and I was surprised to be told by the owner that he did not care whether his chauffeur used the car or not. Of course, we could not do anything after that. It was the first time, however, that I ever saw such indifference displayed. A great many of our patrons pay scant attention to our weekly reports, I suspect, but the fact that we send them helps to keep the men under control. Then, too, they know that we won't permit any abuse of the cars to go on under our noses and they govern themselves accordingly.

"All garages are not as strict as this, however. The other evening I had been to the theatre, and on my way out I saw, on a side street a car belonging to a friend. The chauffeur was not in his seat, so I stopped and looked around to see where he was. Presently I saw him waiting at the stage entrance. I stopped in a near by refreshment establishment and came out just in time to see Mr. Chauffeur loading up the car with a party of chorus girls. You may imagine the kind of a lark they had.

"The next day I saw my friend and made a casual remark about his having been out in his car the night before. As I expected, he denied it. Then I told him that his car was out and he was very much surprised.

"'Don't you get a report from your garage, showing when the car is taken out?' I asked. He replied that he did not, and that he was not even aware whether any record was kept.."

It is with the garages run as a separate business, or with a salesroom "on the side," however, that the chauffeur evil flourishes like the green bay tree. There the garage keeper, if he does not actually "stand in" with the chauffeur and wink at or even encourage his transgressions, is at least from the very nature of his position, obliged to keep the chauffeur in a good humor. The chauffeur has the ear of his master and can usually store the car where he pleases; this, of course, is where he receives the "best treatment." "Good treatment" consists of a regular commission, usually 10 per cent, on all cars stored and a similar "rake off" on all accessories purchased and all repairs made. The people in such establishments are very reticent, and when they will talk at all they are guarded in their statements.

"There is no use dening that commissions are paid," said one of these in reply to the question. "But they are not as general nor as large as is commonly supposed. But we have to get trade and where it is necessary we do not haggle about a few dollars more or less. Nor can we afford to antagonize a chauffeur if he wants to have a little amusement with his employer's car when the latter does not want to use it. We aim to treat both owner and chauffeur right and I guess we succeed pretty well or we would have these cars—" and he pointed to a long line of vehicles, many of them high powered and costly cars.

While it will not do to condemn all garages of this kind, as a number of them do as close to a legitimate business as the circumstances will permit, it is undeniable that many of them are in crying need of reform. But here, too, no reform is possible without the co-operation of the owners. If they are careless and indifferent their chauffeurs are unbeatable. No garage keeper can make headway against them, no matter how desirous he is of doing so, without the backing of the owners. With them enlisted, any garage keeper can win out, while it is doubtful whether a combination of garage keepers and chauffeurs could ultimately win out against the determined owner, for there is a class of garageman who wants to do right and will if he has half a chance. One tradesman voiced this view of the matter when he said:

"Nothing would please me better than to conduct a garage on right principles. There would be no nonsense about it, no commissions, no bounses, no divies, no swelling of bills to give the chauffeur his share of the loot, no 'hacking' of cars. The service would be prompt and business like, the cars kept in order and always ready for service and the chauffeurs kept in check at all times. I'll venture to say such treatment would appeal not only to owners, but to the decenter chauffeur also. As it is now it is a case of graft all the way through. Why, it is common talk in the street that one millionaire owner paid $1,600 to have his car put in order for one race, and $800 more to have it repaired after the race; and it didn't win, then. The owner, so they say, paid the bill without a murmur! Do you wonder that chauffeuring is a profitable business?"

Why Gilson Wears Smiles.

En route to Detroit, J. W. Gilson, secretary of the Hartford Rubber Works Co., stopped over in New York for a few hours on Wednesday. Gilson is all smiles these days, and the fashion in which the Dunlop perfected detachable tire has "caught on" quite justifies the smile. It has been adopted as regular equipment by the Electric Vehicle Co., the Cadillac Automobile Co. and the Reo Motor Car Co., while Thos. B. Jeffrey & Co. will list it as one of three tires which they will furnish on their Ramblers in 1905. The factory at Hartford has been working nights for the last month to keep pace with the demand ,and has now attained an output of 100 sets per day. When Gilson was asked if the success of the tire had not surprised him, he looked hurt.

"Surprised?" he responded. "Why should I be? We knew the tire was a sure winner from the very start."

How Electric Cabs Have Expanded.

In retiring from the presidency of the New York Transportation Co. last week Henry Sanderson let fall some facts and figures which show vividly the onward march of the electric cab in New York.

"Five years ago," he said, "the company's total station capacity was 72,000 square feet, and the company's vehicles, in the course of a year, covered 350,000 miles. To-day the combined floor area of the company's four stations aggregates 222,000 square feet—over five acres—and those stations house over five hundred vehicles, which in the course of a year reached the tremendous total distance covered of 2,000,000 miles."

Mr. Sanderson's retirement was made the occasion of the presentation of a testimonial in the form of a handsome desk set of Tiffany bronze, and engrossed and framed resolutions. He is succeeded by R. W. Meade.

Packard Adds Another Story.

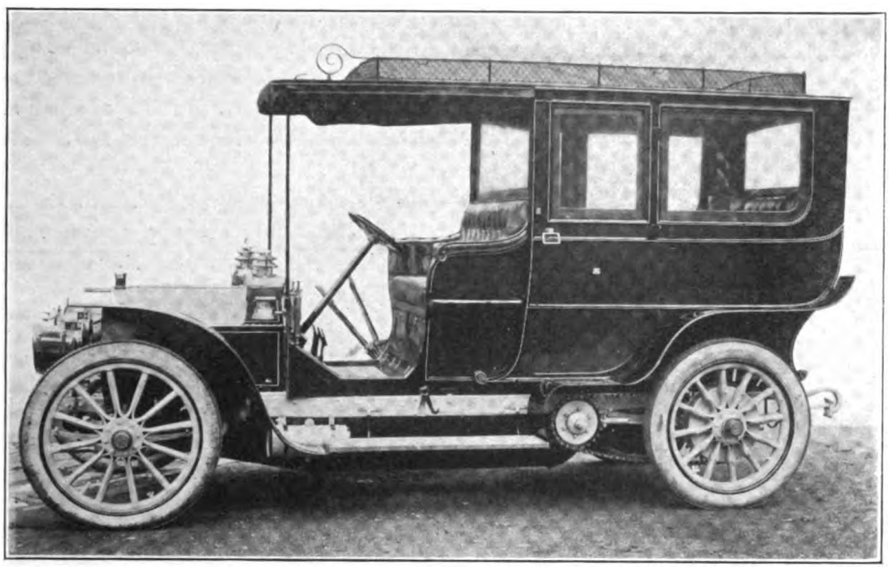
There is nothing the mattter with the Packard. Although the Packard Motor Car Co. recently installed some $30,000 worth of additional machinery and operated their plant until 9 p. m. throughout November, the pressure has required an addition to the factory at Detroit. The work on this was started last week and takes the form of a second floor addition to the north wing of the building. The enlargement provides a floor, 326 feet by 60 feet, or 19,650 square feet. It will be used chiefly for the painting and upholstering work.

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OF EXCLUSIVE DESIGN

Wealthy Motorist's Idea of a Touring Car—Its Many Novel Conveniences.

M. Theodore Kearney, who passed through New-York this week en route from Paris to his California estate, between which points he shuttles annually, shipped ahead of him

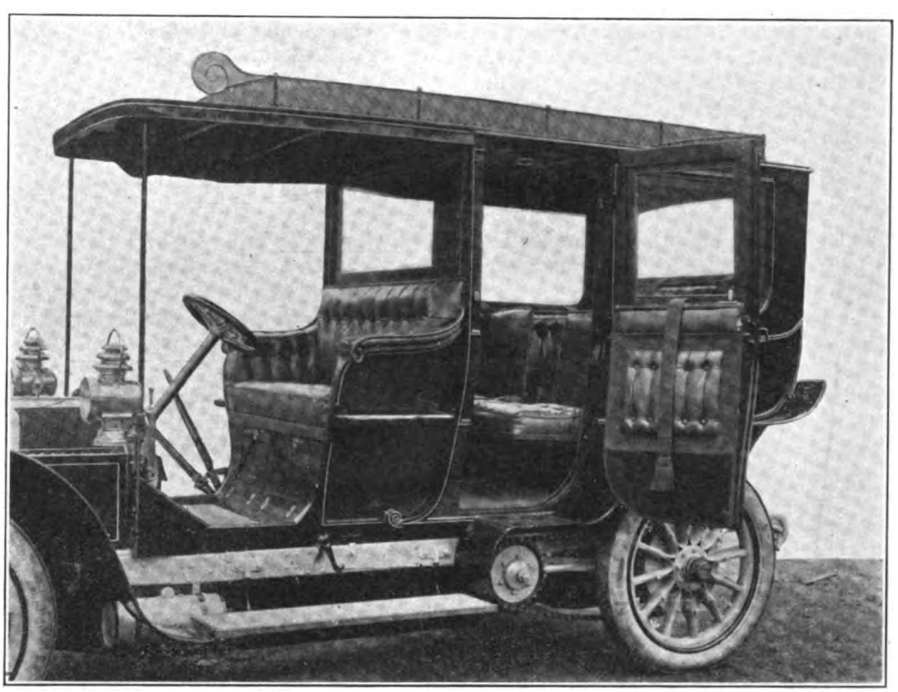


an uncommonly interesting car—one fairly bristling with features, and representing the owner's idea of what a touring car should be. It combines all of the latter day devices that c ntribute to comfort, and, in addition, a limousine body, designed by Mr. Kearney himself and built by Hooper & Co., of London, after all of the notable French body manufacturers had refused to accept Mr. Kearney's order.

The limousine, which is imposed on a 45 horsepower Mercedes chasis, has practically no overhang and no wide flaring sweeps or bulging sides, all of which Mr. Kearney sought to avoid, and successfully. One other idea he kept in mind was a touring car having a closed body, which might yet be made as open, or practically as open, as the tonneau type. This he contrived to do by the use of not merely large sliding windows on front, back and sides, but also by the employment of shutters. It is believed to be the first occasion on which these latter have been used. The glass is made to slide down in the body of the car, instead of swinging sideways or being suspended to the roof; the Kearney design permits them to be dropped out of sight, and, if running at high speed, the shutters, which also slide down alongside the glass, may be raised in the rear and on half of the sides to keep out the dust.

The car is provided with seats for four persons inside, all facing forward. The two in front are moveable, and when not required may be folded and stowed under the rear seat.

The rear seats are upholstered in shape like the best railway carriages in France, with seats sloping backward, so as to throw the weight of the body on the back, and are exceedingly comfortable. Three electric lights are placed inside, also large pockets to hold touring maps and books. There is a timepiece, also one of Smith & Son's new speedometers, which constantly indicates the speed of the car at all times, records the run for the day and shows the total miles run by the car since going into commission, whether it be 1,000 or 20,000 miles. A further convenience is one of Muhlbacher's electric indicators, by which, on pressing the proper button, the indicator on the dashboard gives the chauffeur the following signals: Left, Right, Turn, Go on, Stop, Slower, Faster, House, etc.



The chassis being a 1904 Mercedes, has unusually long springs, which makes for easy riding, but, in addition to this, the new Hartford-Truffault springs, or shock absorbers, have been added. The tires are Michelin, the rear ones having the Samson non-skid covers.

Of the minor changes in the car may be mentioned the luggage rail, which runs the full length of the top, so that the weight of the extra tires and four large suit cases carried there in touring may be evenly distributed, and not centred over the rear wheels. Of the two forward lamps, one has a powerful lens, to project the light a long distance up the road, and the other is designed to light up the road near the car.

The chassis is painted a warm cream color, with black stripes, and the whole body of the car to the room is a rich blue, with the panels and windows outlined in black stripes and light blue stripes laid on top of these. The result of all is a very neat and artistic car of graceful lines, that is much admired by those who have seen it, and one that, being quite "up to date," must prove very satisfactory to the fortunate owner.

The first annual banquet of the Newton (Mass.) Automobile Club on Saturday last was graced by the presence of several notables, among them H. W. Whipple, president of the A. A. A.; Elliot C. Lee, president of the Massachusetts Automobile Club, and Alexander Winton, of Cleveland, and Harry Fosdick, of the Winton staff. In all seventy persons participated in the feast. Messrs. Whipple, Lee and Fosdick were among the speakers. Fosdick said he had knowledge that even more restrictive legislation would be attempted at the next session of the Massachusetts Legislature, and urged automobilists to get together and prepare to make a stand for self-protection.

M. G. Chauffour, a Parisian banker, is, appropriately enough, an ardent motorist.

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WHIPPLE IS RENOMINATED

Will Again Lead the A. A. A.—Few Changes in Present Slate to be Made.

Harlan W. Whipple will be president of the American Automobile Association for another year. He was not particularly anxious to serve another term, but was prevailed upon to allow his name to be placed at the head of the ticket again. All of the other present officers were also renominated at the meeting of the Board of Directors, held last Tuesday at the rooms of the Automobile Club of America. Several changes were made in the Board of Directors. An important amendment to the constitution was proposed. In place of electing seven directors, it is planned to give every affiliated club, with a membership of fifty or more, representation on the board, but confining a quorum to four, as at present. It was also decided to include the second and third vice-presidents in the Board of Directors and to change the meeting dates from the first Tuesday to the first Monday in the month.

The complete ticket follows: President, Harlan W. Whipple, Andover, Mass.; first vice-president, John Farson, Chicago; second vice-president, W. H. Hotchkiss, Buffalo; third vice-president, M. Johnson, Los Angeles, Cal.; treasurer, G. E. Farrington, Orange, N. J., and secretary, C. H. Gillette, New York. The directors named are D. H. Morris, W. C. Temple, Elliott C. Lee, Windsor T. White, A. R. Pardington, R. L. Lippitt and C. G. Burgoyne. W. E. Milbank, B. H. Warburton and J. A. Chase are the directors who will retire.

The meeting was presided over by President Whipple, and those in attendance were Elliott C. Lee, Boston; W. T. White, Cleveland; Dr. W. E. Milbank, Albany; G. E. Farrington, Automobile Club of New Jersey; S. H. Valentine, New York, and A. R. Pardington, Brooklyn. A. T. Post and Emerson Brooks were also present. Five clubs were elected to membership at the meeting, these being the Geneva, Binghamton, Chenango County, Houston and Dallas organizations. There are now forty-one clubs affiliated with the A. A. A., while last year at this time there were but sixteen. The annual meeting will be held in New York City on January 16, and the annual banquet will follow.

New Britain Club in Shape.

At a meeting held last Thursday night, the Automobile Club of New Britain (Conn.) adopted a constitution and by-laws. The objects of the club are to promote the intelligent use of motor vehicles for pleasure and for commercial purposes; to promote the social intercourse of the members; to protect the interests of automobile and motor bicycle owners; to influence improvements through the proper officials in the main roads surrounding New Britain; to co-operate with the authorities in maintaining legal speed by motor vehicles passing through cities and towns and to maintain signs along the main roads wherever parties touring through that section of the country will be benefited. The following committees were appointed: On membership, F. H. Allis, F. S. Neal, of Plainville; runs and tours, A. W. Stanley, D. E. Bradley, of Berlin; M. S. Hart; on legislation, W. H. Caldwell, G. E. Sage, of Berlin; E. Allen Moore; on good roads, E. G. Babcock, E. A. Freeman, of Forestville; W. W. Mildrum, of East Berlin; on rights and privileges, P. P. Wilcox, E. W. Abbe, E. A. Bardol. The club will endeavor to have a law passed requiring lights on all vehicles.

How the Kentucky Colonel Got There.

Colonel Bennett H. Young and Frank Parfitt, the city inspector of electric wires, made a record-breaking automobile trip between Louisville and Lexington, Ky., one day last week. The distance of ninety-six miles was covered in three hours and forty-five minutes. The start was made from Louisville at 5 a. m. and they reached Lexington at 8:45 o'clock.

Colonel Young had an imporant case in the court at Lexington, but missed his train, which leaves at 3:30 a. m. He tried to charter a special train, but was unable to effect arrangements. Parfitt is Colonel Young's neighbor, and owns a Rambler automobile, and came to the rescue. He agreed to take the Colonel, and they started in a heavy fog, which was not lifted until nearly 8 o'clock. At times during the trip, it is naively remarked, Colonel Young wished that he had not engaged Mr. Parfitt, so rapid was the pace of the machine, but when they reached their destination fifteen minutes before court convened Colonel Young was delighted.

Lone Entry for Bennett Cup.

Although entries for the 1905 race for the Bennett cup close on Thursday next, but one American entry is in sight, that of Dr. Harold E. Thomas, the Chicago enthusiast, who has had a Locomobile racer built to his order. The entry is practically assured, but cannot be formally accepted or announced until Dr. Thomas is elected a member of the Automobile Club of America.

Two Changes in A. C. A.

Pressure of business has obliged Samuel H. Valentine, the newly elected treasurer of the A. C. A., to tender his resignation, and the vacancy was filled last week by the election of Emerson Brooks. Retiring President W. E. Scarritt was elected to the vacancy on the board of governors caused by the elevation of President Morris.

Harvard Student Goes to Florida.

A. H. Diston, a student of Harvard University, intends to make an early start for Ormond so as to be present at the races there. He will ship his car, a Packard, to Philadelphia this week from Cambridge and will drive it over the roads from the Quaker City to Florida.

FOR FLORIDA'S CARNIVAL

Changes Effected that Make for Permanent Success—Philadelphian Becomes President.

Although it has not been officially decided and heaven and earth are being moved in the effort to prevent it (for the sake of hotel receipts) it is quite possible that the races over Ormond-Daytona beach will finish at Daytona instead of at Ormond, as has been the custom heretofore. Another change for the better, and one that will remove the impression that the carnival is one-man affair, is the likelihood that entries for the coming meet in January will be received by J. B. Parkinson, secretary of the Florida East Coast Auto Association, at Daytona, as well as with the "unselfish" manager in New York City. To be sure, these changes are bitterly opposed by the Ormond hotel keepers, who inaugurated a most reckless expenditure of money for telegraphing to everyone they knew in Florida as soon as they heard about the plans. One thing is certain and that is the fact that an undertaking of the magnitude and international aspect of the Ormond-Daytona Carnival should not much longer continue to be a mere anex of a hotel, no matter how large and magnificient the hostelry may be. It should be understood that the hotels are practically all that there is of Ormond, while Daytona is quite a smart little town.

Additional evidence that the "one-man" regime has passed, and that the carnival will cease to be a hotel annex, developed late on Wednesday, when it was announced that C. G. Burgoyne, of Daytona, Fla., had resigned the presidency of the Florida East Coast Automobile Association and been succeeded by Edward M. Steck, of Philadelphia. Mr. Steck is a millionaire coal operator and a racing enthusiast. He is half owner of the big Darracq racer which recently was imported, and was one of those who took a firm stand in insisting that the Florida carnival be thrown open to the world and not used to satisfy the personal grudges of any one man. Mr. Steck recently purchased a residence at Daytona.

Baras Gets Kilometer Record.

Another cut in the flying kilometre record was made at Ostend, Belgium, on November 14. Baras, on a 100-horsepower Darracq, was the record breaker, he covering the distance in 21 2-5 seconds, beating the previous best time, that made by Rigolly, by the narrow margin of one-fifth of a second.

First Entry for Glidden Trophy.

The first entry in the inaugural competition for the Glidden touring trophy is reported from England. The entrant is Roger H. Fuller, a member of the Automobile Club of Great Britain and Ireland.

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THE TEST THAT FAILED

How a Series of Attempts to Destroy a Car Came to Naught.

Following the custom inaugurated in 1903, when the first four cylinder Packard was produced, the Packard Motor Car Company have been putting their Model N car through a course of sprouts. A "destructive test" is the apt designation of the series of ordeals through which the car was put, and that it turned out to be an utter failure, in so far as the endeavor to destroy the car or any essential part of it, is cause for congratulation instead of lamentation. The car came through all the tests with flying colors, and it would be a futile task to attempt to convince any of the 'crews' who participated in the harrowing tests that any reasonable amount of usage—either fair or unfair—can detrimentally affect the Model N Packard.



AN INCIDENT OF THE TEST—A PUNCTURE REPAIRED IN 12 MINUTES.

The first of the tests was conducted in the mountains of Pennsylvania. The new car was shipped to New-York and driven from there to Philadelphia, and up into the mountains around Scranton and Wilkesbarre, where it was subjected to terrible abuse. During its stay it lowered the record on the Wilkesbarre mountain from 14 minutes to 8 minutes. It performed in many other ways to the satisfaction of General Manager Joy and Vice-President Alger, who personally conducted the test.

The second attempt to find a weak spot in the car was made by Charles Schmidt, the Packard designer, and was aimed at the motor alone. There were brake tests at speeds ranging from 400 up to and including 2,500 revolutions per minute. In this test it was not the idea that any user of the Packard car would ever expect his motor to run at speeds approaching 2,000, to say nothing of 2,500 per minute, but the testers desired to satisfy themselves that the motor itself had enough margin of safety to meet every requirement of the rational motorist.

The third test was made by Messrs. H. B. Joy, S. D. Waldon, L. W. Conkling and E. W. Roberts, with a brand new car, and consisted of a 250 mile run over as bad roads as exist in the country, at as high a rate of speed as was possible, considering the safety of the passengers and proper respect for the rights of other users of the roads. It was the idea in this trip to if possible break or injure the running gear and springs, if such abuse would accomplish it. The car completed this test in perfect shape, with the exception of a Cape Cart top, with which the car was fitted, which, though closed up and strapped down to the body, received such shocks as to break every one of the steel bows holding it to the body.

The final test was made with a standard model "N" Packard car just as it came from the erecting shop, with the exception that prior to starting the journey the four connecting rods were loosened up so that each one had sufficient play (about 1-125 of an inch) to produce quite a noticeable pound. The car was then started from the factory at 5 o'clock on the morning of November 19, and driven as hard as the safety of the operators and the conditions of traffic would permit through to Chicago, arriving there—313¼ miles—at 9 o'clock the same night. It was the idea that by putting through this test with the connecting rods loose and pounding at every revolution of the motor any deficiency in the factor of safety in any of the important parts of the motor would be revealed by the continued hammering, and that any weak spot that would not ordinarily come out to notice, except after many times the same amount of driving in the hands of ordinary users, and probably not until the middle of the season, would be at once detected. With the return journey to Detroit, the run represents an average of over twenty-one miles an hour running time, as it was completed in 32½ hours elapsed and 29 hours and 20 minutes elapsed time. There was a noticeable improvement in the action of the motor during the last 200 miles over what it had been during the first 200. In spite of the looseness of the connecting rods, they seem to be working quite freely, and apparently did not absorb enough power to make any apparent reduction in the speed of the car.

Chloride to Prevent Freezing.

Until now it has been difficult for motorists to obtain chloride of calcium for use as an anti-freezing mixture for water cooled cars, owing to the fact that it was usually sold only in large quantities. The demand for it has so increased, however, that the Solvay Process Co., of Syracuse, N. Y., is now putting it up in two gallon cans, which are carried in stock in New York, Chicago, Boston, Pittsburg and Baltimore. The Carbondale Chemical Co., Carbondale, Pa., are the general selling agents.

The chloride is put up in the form of a concentrated solution of 1.400 specific gravity, containing 40 per cent of anhydrous calcium chloride; this, when diluted with an equal volume of water, gives a 20 per cent solution of 1.200 specific gravity, which will withstand a temperature of 9 degrees below zero Fahr., without freezing, while its boiling point is 220 degrees Fahr.

The solution is water white and clear, and is free from sediment; it is neutral or slightly alkaline in its reaction; it is not decomposed by heat. It is practically chemically pure, free from chloride of sodium or salt and from chloride of magnesium.

By varying the amount of water added, a solution of any desired strength may be had, according to the following table:

Specific gravity.	Freezing point.
1.250	—32.6°F
1.225	—18.0
1.200	— 9.0
1.175	Zero
1.150	+ 7.5
1.125	+ 13.0
1.100	+ 18.0

The solution retails for 50 cents per gallon.

Darracq Earns a Half Million.

One French concern that has made a great deal of money during the past year is the Darracq Co. Its report and balance sheet for the year ending September 30, 1904, show a net profit of over $562,000, and this is arrived at after writing off depreciation, commisisons and all charges at the French works and the London depot. After paying 6 per cent on the preference shares and 62½ cents per share on the ordinary shares, $250,000 will be set aside for increase of works and machinery, and $175,000 carried forward. The capital of the company is $1,875,000.

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TO OPEN BEAR CREEK ROAD

Motorist Brings Suit Against Turnpike Company, which Files an Amusing Answer.

To issue an order prohibiting automobiles from using a public road is one thing, but to give a legal reason for the order is quite another. The Laurel Run Turnpike Co., which owns the Bear Creek Boulevard, near Wilkesbarre, Penn., provided one horn of a dilemma for itself by trying to keep automobilists off the road, as was told recently in The Motor World. Charles E. Bertels, a motorist of Wilkesbarre, imagined that he had as much right on the road as other citizens who drove horse drawn vehicles, and he has provided the other horn of the dilemma for the company by bringing suit against it for the prohibition. He asked for a mandamus to compel the company to allow him to drive over the road, alleging that he was not allowed to use the road, even after he had offered to pay toll for the privilege. Some very unusual reasons are given for the prohibition in the company's answer to Mr. Bertels's suit. Part of the answer is as follows:

"The said automobile did not come into use until about the year 1898, and are now in use by very few people in comparison with the great number who use vehicles drawn by horses.

"The said automobile, by reason of their size, great speed, rivalling the velocity of railway trains, and alarming noise, are extremely dangerous to the travelling public, and their use on public highways is fraught with great danger to travellers who drive horses.

"The said turnpike was designed and constructed expressly for the convenience and pleasure of people in driving with horses over the same, and by reason of grades, high embankments and numerous curves and passage of automobiles over the same would be such a menace as to exclude vehicles drawn by horses, and give to automobiles a complete monopoly of its use.

"In our judgment, safety to the general public pre-emptorily demands the exclusion of automobiles from our turnpike, and for this reason we refuse passage thereof over the same.

"Not only does the law fail to provide any toll whatever, but it would be impossible to provide any reasonably adequate toll for automobiles over turnpikes by reason of their character above mentioned.

"Furthermore, we say that between the terminals of said turnpike, to wit, between Wilkesbarre and Bear Creek there already exists, and for many years has existed, a public road much shorter and more direct than our turnpike, and affording to the petitioner every facility for passage with his automobile."

To Prosecute Wisconsin Motorphobes.

Members of the Milwaukee (Wisconsin) Automobile Club intend to put a stop to the attempts of farmers to injure machines and tires, and will prosecute all offenders in the future. It is claimed that broken glass and pieces of barbed wire are scattered on the roads and that rails and logs are used as blockades at night. F. C. Beach, a member of the club, recently had both of the rear tires on his machine punctured by a man who shot at them with a rifle. The club's president, the Rev. J. F. Szukalski, told of one occasion when he found a road blocked with logs in such a way that wagons could pass without injury, but an automobile would be badly damaged. It is also said that automobilists have been compelled to stop at the point of guns while farmers drove mockingly past them. No attempt will be made to prosecute past offenders, but in the future prosecution will follow whenever evidence can be obtained against the offenders.

Shanley "Does the Honors."

B. M. Shanley, jr., tendered the officials of the recent meet of the New Jersey Automobile and Motor Club a mushroom dinner at Maison Pedeflous's hotel, near Plainfield, last week, as a celebration over the success of the meet. The party went in four large cars, Mr. Shanley leading in his ninety horsepower Mercedes, and the affair was one of the most enjoyable at which motorists in the vicinity have gathered. In the party were President Frederick R. Pratt, of the New Jersey Automobile and Motor Club; Dr. James R. English, its vice-president; C. S. Wells, the secretary; W. C. Shanley, Peter G. Murray, J. W. Mason, J. H. Wood, R. H. Burtt, J. V. Clark, James M. Reilly, J. J. O'Connor, jr., W. V. Snyder, R. T. Newton and J. H. Dawson.

Green a Genuine Enthusiast.

Colonel E. H. R. Green, president of the Texas Midland Railroad, is said to have the only private railroad car in the world devoted to the use of automobiles. His private car "Lone Star" was recently damaged by fire, and he had it rebuilt to carry his racing automobile. He has three or four machines which he races at contests in different parts of Texas, and the private car has been fitted up with a repair shop. A repair man accompanies the machines on their travels. The car is fitted with an arrangement to facilitate the loading and unloading of the automobiles.

Oppressive Measures Likely in Maine.

It is regarded as almost certain that the Maine legislature will, at its session this winter, discuss automobile legislation. A bill was before the body last winter, but failed of passage. It is rumored that the new bill will contain a clause restricting the use of automobiles to certain hours, and the motorists of the State are already preparing to fight the measure if it contains anything so outrageous.

THEY WANT THE WHOLE ROAD

Gentle Country Folk Will Petition Connecticut Legislature to Prohibit Use of Automobiles.

In Litchfield County, on the extreme western edge of Connecticut, the farmers and countryfolk generally are very much aroused—so thoroughly aroused, indeed, that the more hotheaded are actually circulating a petition to the legislature praying that automobiles be prohibited the use of the public roads.

George S. Thompson, of Kent, appears to be one of the leaders in the movement. The burden of his argument is that the roads are narrow. Apparently unconscious of what it implies, he state, in other language, that the countryfolk driving horses want all of the road themselves. He admits, also, that, like countryfolk, there are automobilists, who are considerate, exactly as there are "young nabob," as he calls them, who are inconsiderate.

He and his neighbors in Litchfield County, however, appear to desire that both innocent and the guilty shall be swept off the roads entirely.

"Let the autos have their own road like railroads," he pleads, in a public statement.

Although he admits that there is small chance of the legislature heeding the petition, he thinks that perhaps sufficient sentiment may be aroused throughout the state to "have something come of it." The petition is as follows:

To the Honorable Senate and House of Representatives, State of Connecticut: -

We, whose names are herein signed, are citizens of Connecticut and town of Kent of the age of 21 years and over, and we petition your body that an act may be passed prohibiting automobiles or vehicles, whose motive power is steam, gasolene or electricity from use of country roads of this State on the grounds that country highways being generally narrow with many sudden curves and dangerous places, and from the extreme liability of automobiles to frighten horses are unfit courses of travel for such, and being a pleasure vehicle of a comparative few, render the roads unsafe for the many, who must of necessity, travel the roads. And, we believe laws regulating speed or making owners of automobiles liable for damages are, and will be difficult of enforcement in country districts. We, therefore, pray they may be prohibited from travel on country roads of this State.

Coffee grounds are said to be efficacious in aiding the removal of oil and grease stains from the hands. A motorist who has tried it gives this method of application:

Obtain a good lather with any household or other soap, and taking a handful of coffee grounds proceed to work it well into the hands. After a minute or so the hands, when rinsed free of the gritty mixture, will be found to be beautifully soft, fresh and clean.

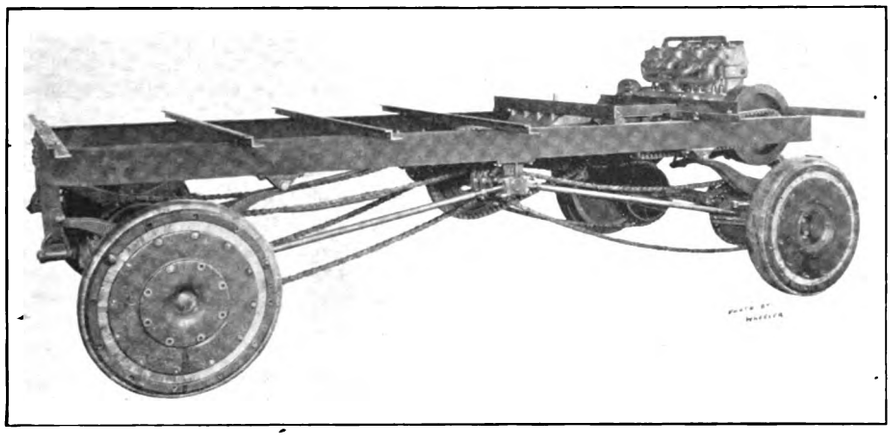
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MILWAUKEE'S MOTOR TRUCK

Incorporates Some Ingenious Features—What They are and How They are Worked Out.

The first truck of the Four Wheel Drive Wagon Co. of Milwaukee, has been practically completed, and from the best reports is giving a good account of itself. It is shown by the accompanying illustration.

The truck weighs 2 tons, and is capable of carrying 5 tons. The frame is of ship channel iron 5-16 inches thick and 6 inches deep, made in one piece 42 feet long and joined at the rear. It is mounted on steel



MILWAUKEE FOUR WHEEL DRIVE WAGON.

axles, weighing 350 pounds each, by platform springs of large size. The wheels constitute a new departure, being made of wedge-shaped wooden blocks set solid in hub flanges, and reinforced by retaining rings on each side, set 1½ inches from periphery, which tend to prevent slipping of the blocks and aid in crossing tracks and other obstructions. No tires are used, the wooden blocks acting in this capacity. They fill with gravel, stones, etc., from the road surface, become rough and hard, and cannot slip.

Each wheel is pivoted in center of hub, which is 11 inches outside and 7½ inches inside diameter. Any wheel pivot may have the pin removed, or any two wheels may be so treated, yet the wheels, it is claimed, will always track perfectly. Each wheel is driven from a central point by chains. The central transmission wheel is directly connected to engine by chains.

In spite of the contrary appearance there is no loss of power from the six chains. No more difficulty is experienced in turning the whole mechanism against the compression of the engine than in turning the engine alone against its compression. All the driving mechanism can be moved by a pull of one hand on the main chain. Each wheel has a band brake, which is equally efficient forward or back. There is a total brake surface of 500 square inches. There is no chance of dead load as each wheel drives direct.

The engine is a 40-50 horsepower four-cylinder water-cooled, mounted crosswise in front and enclosed in a six-foot cab for the engineer. Control is like that used on street cars, circular, and so arranged that it automatically locks wherever placed. The driver's seat will be over engine. Radiator will be at one end, and water tank at the other end of engine, and valves placed in pipes so that water can be cut off from radiator easily. Water pipes will be run around engine, and the whole be enclosed in hood and under the seat of the cab, which will leave little chance for freezing in any weather. A fan will also be so attached to radiator and so arranged that it can be used at will.

The speed of the car with 5 ton load, high gear, will be 10 miles; intermediate, 6; low, 2½. On low gear the engine transmits at ratio of 48 to 1.

The completed trucks will be sold at prices considerably lower than the prevailing quotations of $1,000 per ton capacity. This 5 ton truck will bring $3,000. Other sizes will also be built. Deliveries will be made February 1.

Syracuse Hotel to Use Automobiles.

Four Columbia electric vehicles have been purchased by the proprietors of a big hotel in Syracuse, and will be put into commission about the first of the year. Two of them are 'buses to carry passengers, and the others are wagons to haul baggage. The passenger vehicles will be made like opera 'buses, and will seat ten passengers each.

Will Follow the American Plan.

A heavy vehicle competition is to be promoted next year by the Automobile Club of Marseilles, France. The plan of turning over the competing cars to be operated for two weeks by a carrying company, as was done in the commercial vehicle test of the A. C. A., last spring, is to be followed.

Always look at both sides of a punctured inner tube, to ascertain whether the puncturing object has penetrated the under as well as the upper portion of the tube, and thus perhaps save a second dismantling of the tire.

INDIA A GOOD MARKET

But Cost of Gasolene Requires that Cars be Equipped with Special Carburetters.

"To the English maker of cars India is a very far-away place. Doubtless; but in a half-hearted kind of way he tries to get a footing in the Indian market. But the impression his spasmodic effort leaves on the mind of the average Indian motorist is that the English car maker is too busy supplying the needs of the home country, and too insularly ignorant in regard to Indian conditions, to make a businesslike bid for the Indian trade," says F. J. E. Spring, in the Motor Car Journal.

"The consequence is that French and American cars are cutting him out; and, just as the French have already pretty well captured the car trade in the Federated Malay States, where the De Dion-Bouton reigns supreme, so they and the Oldsmobile and Locomobile people will get a real footing in India if English makers do not soon realize the position.

"What we users of cars in India have chiefly to complain of is that the makers of internal combustion engines will insist on forcing on us an engine with a carburetter suited only to the use of petrol. Now India is a biggish place, just about the size of all Europe, including the British Isles, with Russia cut off. It is a country of rich men of the native land owning class, and of fairly well-off English officials, who, as a class, are sportsmen, and would like to use motor cars, as well as their stables full of horses, if only the makers would take the trouble to learn the local conditions and supply what is required. What is wanted will be understood from the following:

"The temperature inside an iron covered goods wagon during several months of the year may run as high, for some hours of each day, throughout great tracts of India as large as France and Germany, as 150 degrees F. Similarily, in the towns, or in private houses, where petrol is likely to be stored, the temperature may run up, for like periods, to anything between 105 degrees and 125 degrees. Now, these are not very nice temperatures for petrol, and the consequence is that the Government, who practically own the 27,000 miles of Indian railways, and who, moreover, are responsible for the public safety in general, whether on the railways or elsewhere, find it necessary to place such onerous restrictions on the carriage of petrol that, except in a few large towns, the motor car owner is practically unable to replenish his tank.

"At this moment a conference of all the railway managers of India is sitting in conclave, and one of the subjects under consideration is the possibility of permitting consignments of ten gallons of petrol to be dispatched by passenger trains. At present the motorist can only carry two gallons at a time,

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and he must be himself a traveller in the same train. In other words, as a convenience to motorists travelling by train, they are allowed to be accompanied by a two-gallon tin of petrol. If they want any further supply it must be sent ahead of them by goods train, and in this country of magnificent distances that may mean that it must be arranged for weeks ahead. Now there is not the smallest use in the stay-at-home British maker of ears thinking to himself, 'This is all wrong, it ought to be altered.' Doubtless it ought, but it will not be altered to suit his convenience. Meanwhile he is losing his trade to Americans and others, who, instead of saying, 'The conditions of a country of three hundred millions of people must be altered because my drummer has not put me up to the tip to meet those conditions,' say, 'How can I adapt myself to the conditions of the country?"

"I have explainedw hat these conditions are as regards petrol. There is no trouble, except the cost of it. two to three shillings a gallon, in certain great cities; but throughout the rest of this vast country there simply is not any petrol, and there is uot going to be any, whatever the British car maker may think. Then he will doubtless ask, 'What is there to take its place?' There is paraffin oil to take its place—kerosene we call it—in unlimited quantities. There is probably not a petty hamlet of half a dozen huts along the roads of India, throughout the length and breadth of the land, where kerosene cannot be bought. Not high-flashing oil that is only burned in rich people's houses, but low-flashing Russian, or Burma, or Borneo oil, say 120 degrees flash point, most if it imported in bulk and run all over India in bulk oil cars, to be stored in tanks near the railway stations for sale to the villagers either in bulk or re-canned.

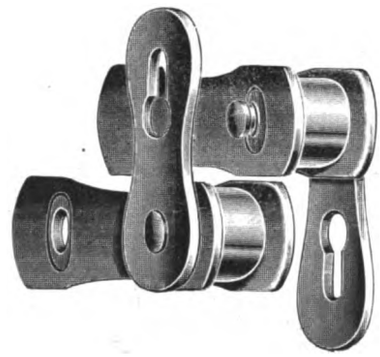
"But the English car maker will insist on putting carburetters on his cars, chiefly of the float type, which do not permit of kerosene being used. We owners of cars are curious to know why he does this. Is it his insularity? or is it cussedness? or is it the intensely British idea, 'Take my goods or leave them?" For the last month an American Oldsmobile has been running about Madras, some twenty to thirty miles daily, on common kerosene (paraffin) oil. The carburetter, not a float one, serves equally well for petrol and for kerosene when once warmed up. Therefore, the owner starts his car for about one hundred yards on petrol and then changes over to kerosene. While patrol here—in a seaport where it is comparatively cheap—costs 3s., kerosene costs only 6d. per gallon. Therefore, if, as appears to be the case, both do the same mileage per gallon, the saving on 6,000 miles in a year, at thirty-six miles to a gollon, will be about £20 in a year, or enough to provide the owner of the Oldsmobile with a new set of tires annually.

"But the saving in cost is a trifle compared with the car's ability to take its owner practically everywhere, throughout the length and breadth of India."

Improvements in Baldwin Chains.

The Baldwin Chain & Mfg. Co., Worcester, Mass., are offering for the 1905 season two practically new chains, one of their well-known detachable type, the other of the riveted variety; both are shown by the accompanying illustrations.

The detachable chain is now made so that



the links cannot become detached by accident or breakage. It has less parts than the original Baldwin detachable chain. Each stud is riveted at one end on alternate sides. The links, however, cannot slide together when in use. The smaller cut shows the shape the chain must assume in order that the links may be detached.

The extension of the ends of the links of



the riveted chain and their rounded edges constitute features, the extended ends in both the riveted and detachable chain tending to limit the side movement of the chain when in use. The longer the chain is run the greater the tendency for lateral sway of the chain, and this is largely limited in both forms of the chain by the extended form of the side links. This also makes the space of the sprocket tooth in each link the same width. The nicely rounded edges help the chain to easily find its place on the sprocket. This is desirable from the fact that many users of cars, especially novices, are careless in maintaining the alignment of their sprockets, and when they are thus out of line the sprocket tooth strikes against the square edges and ends of the links of the chains as they have been heretofore made, producing friction in running. By the use of the rounded edges, there are no square corners for the sprocket teeth to strike. The chain is assisted as much as possible to its place on the sprocket, and it helps in the direction of quiet running.

For a Bee Line to Black Hills.

Though it is but 160 miles in a straight line from Chamberlain or Pierre, South Dakota, to Rapid City in the Black Hills, it is necessary to make a railroad journey of a thousand miles to get there. Since the settlement of South Dakota, no railroad lines have been built from the Eastern part of the State to the Black Hills. Residents of the district who wish to visit the Black Hills must go to Sioux City, Iowa, or Omaha, Neb., and travel westward through Northern Nebraska.

To remedy this Joseph Moore, a wealthy stockman, who lives in western South Dakota, proposes to establish an automobile line between Pierre and Rapid City. He will run the machines over the straightest and best road he can find betwen the Missouri River and the Black Hills, and thinks the distance can be covered in ten hours. Although there are some rough roads between the two points, Moore thinks the automobile line will be a success, as the r ads will be passable most of the time on account of the light rainfall.

Symptoms of Progress in Russia.

An automobile factory is to be started in Kieff, Russia. It is claimed that it will be the first of the kind in the empire of the Czar, and that some influential capitalists are back of the prospective concern. It is further stated that the government, in order to encourage the local enterprise and have the example imitated, will increase the tax on foreign automobiles and alter the custom regulations to that effect.

May Banish the Horse.

Automobile busses are offered by the Paris Automobile Co. as substitutes for all of its horse drawn vehicles. The company has made experiments with automobiles and finds that steam machines will do their work cheaper than horses. If granted abolition of transfers at the way stations it will establish the new service within one year and reduce passenger fares.

Will Use Two Trucks in Hartford.

Manager Evans of the Hartford, Conn., trolley express has ordered two 20-horse-power trucks of the Knox Automobile Co. for use in Hartford; they will be employed for delivering goods carried by trolley. The automobiles have a carrying capacity of one and one-half tons,

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Good Road to Atlantic City.

The prospect of a good road for automobiles all the way from Jersey City to Atlantic City, N. J., running along the coast, is the pleasing probability presented to motorists for next summer. Ocean County has completed fifteen miles of improved stone road along the shore, and it is the main highway from Tom's River to Tuckerton.

The contract has been awarded for the completion of the main road to the borders of Atlantic County, and when what is finished before the middle of next summer, it will make a continuous good road from Jersey City to Atlantic City. The route will be through the Amboys, across the new bridge, over to the coast and thence to Lakewood, Tom's River and Tuckerton and into Atlantic City. There will not be a poor piece of road on the whole route.

Motorphobia in Bryan's Country.

According to a dispatch from Lincoln, the farmers of the northern part of Nebraska are preparing to fight automobilists. There are many good roads in that section of the State, and the automobile travel is quite heavy. The farmers have pledged some of the State legislators from that section to introduce a drastic bill in the legislature to regulate automobiles. It will be intended to keep self propelled machines from the roads altogether unless run at a very low speed, and they must stop at the side of the road as soon as a horse drawn vehicle comes in sight. Motorists are preparing to fight the proposed legislation, and will ask for equal privileges with teams.

State Law is Superior.

City Solicitor Baker, of Cleveland, Ohio, has given an adverse opinion on the long pending Maulberger automobile ordinance. It seeks to limit speed to seven miles an hour, whereas the State law fixes the speed limit at eight miles an hour.

Boston's Generous Park Commission!

In addition to the parkways which the Metropolitan Park Commissioners of Boston opened for the use of automobilists some time ago, the commission has recently decided to open the Revere Beach boulevard during a part of the year. The automobilists may now use this fine stretch of road from the 1st of October until May 15, but not at other times. This makes the boulevard available for the automobilists during the fall months which are among the pleasantest for driving, and also in the early spring months and during the winter. It was thought best to still keep the machines from the boulevard when the crowds are greatest.

Before granting the privilege the board conferred with Revere residents, and none of them found objection to the automobilists using the road from the 1st of October until May 15, but not at other times. That they have this fine shore road practically all to themselves during the winter does not mean that they have any other unusual privileges. They will be governed by the same ten miles an hour speed limit that prevails on the parkways that are open all the year round. The Revere Beach Parkway gives access to the beach boulevard from Everett and Chelsea.

The Wager that Foley Must Pay.

An automobile figures in a novel wager made between John T. Foley, of Omaha, Neb., and Senator Patrick Sullivan, of Casper, Wyo., the former being the loser. The conditions were that the loser should buy an automobile and deliver it in person to the winner at his home. Foley must drive the automobile the entire distance of 700 miles himself and deliver it not later than January 1. He cannot water or provision on the trip, but must depend on finding a place to eat and sleep on the way. As the journey is through long stretches of sand and sagebrush, and over rough mountain roads, the loser has quite a task before him.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—1904 White Touring Car with top, gas lamps and side baskets. Car guaranteed first class shape; $1450.00. Reason for selling—buying 1905 Model "White." Address T. W. J. SUITE, 28 Manhattan Blk., Cleveland, Ohio.

WANTED—Fifteen to twenty traveling salesmen by a well-known and established tire manufacturing company, making standard goods. Only active men who know how to work effectively and all the time need apply. Exceptional opportunity for men of the right sort. Address, TIRES, P. O. Box 649, New York.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

SALESMAN.

A machine salesman, age 30, with 7 years' experience, 3 years with automobiles, desires position. Address E. N. B., care MOTOR WORLD.

FOR SALE—16-H. P. four-ton Panhard Levassor Delivery Truck in perfect running order; a splendid machine at a bargain. FAIRMOUNT ENGINEERING WORKS, 2652 Callowhill St., Philadelphia, Pa.

WANTED—1904 Packard or will trade in 1904 Haynes-Apperson (Runabout). Address M. S., 41 Abington Ave., Newark, N. J.

FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address Room 403, First National Bank Building, Danville, Ill.



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Lamps, Horns, Pumps, Goggles, Plugs, Batteries, Odometers, Jacks, Coils, Baskets, Tires, Chains, etc.

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GOODRICH TIRES

last through a season of hard racing and still in good condition.
Other tires on the same tracks were barely good enough for one heat.
Racing tires must be of the strongest construction. All GOODRICH tires are racing tires.



The B. F. Goodrich Co., Los Angeles, Cal. Oct.6,1904.

Akron, O.

Dear Sirs:-

I am indeed glad to place myself on record as an ardent advocate of your Goodrich Clincher Tire with which I have had four years experience in direct competition with other makes of tires and I truly believe them to be absolutely the best clincher tire on the American market today.

I used a set of Goodrich tires which had been put on my machine at San Francisco in November 1903 and which tires I used for three days hard racing at Ingleside where the car won its first race over Barney Oldfield; it was then shipped to Los Angeles and did two days hard racing here giving Oldfield a hard chase for his money on two occasions; the same car was used nearly every Saturday during the summer and then shipped to Del Monte where it raced two days fast racing winning the two open events with every mile better than 1.04; it was then shipped again to Los Angeles and I can truly say that these tires are still in good condition and ready for more fast work at the coming meet Oct.21st. These tires have never once had a pump put on them after being fitted to the rims at San Francisco last year. All other makes of tires were repeatedly replaced between races and heats at Del Monte; at least six times on one particular car where four different makes of tires were used, none of which I am glad to say were Goodrich.

Yours very truly,

WHITE GARAGE
H. D. Ryus
Mngr.

THE B. F. GOODRICH COMPANY, Akron, Ohio.

NEW YORK, 66-68 Reade St. and 1625 Broadway. CHICAGO, 141 Lake St.
SAN FRANCISCO, 392 Mission St. BOSTON, 157 Summer St. PHILADELPHIA, 909 Arch St.
BUFFALO, 9 W. Huron St. DETROIT, 80 E. Congress St. DENVER, 1444 Curtis St.
CLEVELAND, 420 Superior St. LONDON, E. C., 7 Snow Hill.

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The Week's Patents.

775,765. Vehicle Train. Charles Renard, Meudon, France. Filed January 7, 1904. Serial No. 188,064. (No model.)

Claim—1. A train of driving and driven vehicles, the driving vehicle carrying a motor, a shaft extending longitudinally of the train, operable by said motor, and means operated by the shaft for actuating the driving wheels of the driven vehicle or vehicles independently of each other.

775,819. Explosive Engine. Charles Hibbard and Warren Hibbard, Sandyhill, N. Y., assignors of one-third to Sumner Hibbard, Sandyhill, N. Y. Filed November 30, 1903. Serial No. 183,212. (No model.)

Claim—1. An explosion engine comprising a working cylinder having a radial admission port for the explosive mixture, and a boss closed at its inner end projecting inwardly from the rear end of the cylinder having an annular space around it for the circulation of the explosive gases and which is shaped to receive the explosive mixture from the admission port and to retard its passage toward the exhaust port of the cylinder.

775,860. Means for Cooling Heated Surfaces. James H. Sager and George D. Green, Rochester, N. Y., assignors, by direct and mesne assignments, to Regas Automobile Co., Rochester, N. Y., a corporation of New York. Filed October 14, 1902. Serial No. 127,273. (No model.)

Claim—1. The combination, with a heated body, of tubes projecting therefrom, each tube having one end fastened to said heated body and transverse perforations through the walls of said tube between the ends.

775,871. Variable Air Gap Condenser. Frederick F. Strong, Boston, Mass. Filed May 23, 1904. Serial No. 209,299. (No model.)

Claim—1. The herein described apparatus, comprising means for producing a current of excessively high frequency, an applying electrode, and a convective discharge means, in series therewith between said electrode and said producing means for interposing in the current a convective spray discharge, thereby modifying the current for therapeutic work.

775,872. Rotary Spark Gap. Frederick F. Strong, Boston, Mass. Filed May 23, 1904. Serial No. 209,300. (No model.)

Claim—1. A device of the kind described, comprising a fixed disruptive charge electrode, a rotary electrode co-operating therewith, and arc producing means in series therewith located adjacent said electrodes.

775,908. Speed Regulator for Explosive Engines. John S. Losch, Pottsville, Pa. Filed May 28, 1902. Serial No. 109,283. (No model.)

Claim—1. In an explosive engine having a fuel supply conduit and an admission port, a rocking valve stem having an arm, and a valve on said arm adapted to be moved to and from the admission port to control admission of fuel, said valve being normally held closed, and a governor adapted to act on said arm to open the valve.

775,932. Sparking Ignitor Device for Hydrocarbon Engines. James W. Packard, Warren, Ohio, assignor to Packard Motor Car Company, Warren, Ohio, a Corporation of West Virginia. Filed June 27, 1903. Serial No. 163,351. (No model.)

Claim.—1. An igniting device for hydrocarbon engines comprising, in combination, a sparking circuit, a rotating shaft, a governor device on said shaft, a disk of insulating material arranged transversely of the shaft, a contact plate carried by said disk, and a contact point carried by the governor device and arranged to travel over said disk and contact plate, said disk having a portion of insulating material extending radially outward from said contact plate whereby the ignition is discontinued when the speed exceeds a given limit.

775,941. Transmission Gear for Automobiles. Walter Simkins, London, England. Filed May 16, 1904. Serial No. 208,256. (No model.)

Claim.—1. In combination, a drive shaft, a chain sprocket attached thereto, a road driving wheel, a pulley attached to said driving wheel, a ring of teeth adapted to slip slightly on said pulley and a chain transmitting the power from the sprocket on said drive shaft to the teeth on said pulley, substantially as set forth.

775,999. Automobile Headlight Cover. Harry S. Tompkins, Newark, N. J. Filed Feb. 8, 1904. Serial No. 192,579. (No model.)

Claim.—1. The herein described cover for automobile headlights comprising a back piece and a top piece meeting at the highest point of the cover, a circular front, and side pieces each arranged with its front, top and rear edges joined to the first mentioned parts and at its lower edge overlaping the lower edge of the other.

776,023. Motor and Frame Therefor for Motor Vehicle. Norman T. Harrington, Detroit, Mich., assignor to Olds Motor Works, Detroit, Mich., a Corporation of Michigan. Filed March 21, 1904. Serial No. 199,245. (No model.)

Claim.—1. The combination with a crank shaft of a casing therefor, having an opening therein for the passage of the crank and entering slots in its opposite walls for the reception of the crank shaft, filling blocks for closing said entering slots and a cap for closing said opening.

776,028. Speed Governor. Homer N. Motsinger, Pendleton, Ind., assignor to Motsinger Device Manufacturing Company, Pendleton, Ind., a Corporation of Indiana. Filed Sept. 21, 1903. Serial No. 174,044. (No model.)

Claim.—1. In a speed governor, the combination with an electric generator, of a pawl and ratchet mechanism for driving the same, an electromagnet adapted to separate said pawl and ratchet mechanism, and electric connection between the generator and the magnet, for the purpose set forth.

776,035. Tire. Walter C. Stokes, New York, N. Y. Filed Aug. 27, 1904. Serial No. 222,385. (No model.)

Claim.—1. In a tire having an inner resilient portion and an outer tread portion, the combination of means between said portions to prevent the puncturing of the inner resilient portion and bolts extending through said means and the outer tread portion upon each side of the centre of the outer tread portion, and nuts upon the outer ends of the bolts, for the purpose set forth.

776,047. Tire Rim. Charles G. Fawkes, Denver, Col. Filed Jan. 15, 1904. Serial No. 189,214. (No model.)

Claim.—1. The combination with a cushion tire having a cavity, of a shoe located in said cavity, a duplex rim having engaging interlocking parts located adjacent the inner periphery of the tire, and a fastening device having a threaded connection with the shoe

WHITLOCK COOLERS

For 1905.



The Leading Automobile Builders have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of cool- is worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

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and passing through the interlocking rim members as well as the inner periphery of the tire.

776,078. Running Gear for Vehicle. John F. Murphy, Jackson, Mich. Filed Jan. 15, 1904. Serial No. 189,189. (No model.)

Claim.—1. In a running gear for vehicles, the combination with a body, and wheel supporting means, of means for causing the body and wheels to synchronously tilt in the same direction.

776,118. Speed Regulator for Explosion Engines. Michael H. Daley, Charles City, Iowa. Filed Sept. 30, 1903. Serial No. 175,218. (No model.)

Claim.—1. In a gas engine, an explosion chamber, an adjustable head for varying the volume of the chamber, means for adjusting the head, an inlet valve, a valve operating mechanism including a rocking lever and a revoluble member for engagement with the lever, and means connecting the adjusting mechanism of the head to the rocking lever thereby to alter the position of the latter to an extent proportionate to the degree of adjustment of the head.

776,220. Controller for Electrical Vehicles. Henry H. Cutler, Milwaukee, Wis., assignor to the Cutler-Hammer Manufacturing Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed April 15, 1903. Serial No. 152,701. (No model.)

Claim.—1. The combination with a suitable controlling circuit, of a plurality of electromagnetic windings connected therewith and adapted to respond to variation of voltage, and means for varying at will the voltage impressed upon said controlling circuit without thereby altering the resistance of said controlling circuit.

776,366. Tire Inflating Pump. Samuel E. Spencer, Springville, N. Y., assignor of one-half to Ralph B. Waite, Springville, N. Y. Filed May 2, 1904. Serial No. 205,936. (No model.)

Claim.—1. A tire inflating pump mechanism comprising a starting crank designed to be removably engaged with the driving shaft of the motor, the crank pin mounted to rotate in the crank, a crank arm on said crank pin, a pump cylinder mounted on the first named crank, and a piston in said cylinder having connection with the crank arm.

776,406. Vaporizer for Hydrocarbon Engines. Elden P. Lamb, Rockland, Me., assignor to Camden Anchor-Rockland Machine Company, Rockland, Me. Filed Nov. 23, 1903. Serial No. 182,375. (No model.)

Claim.—1. In a vaporizer for internal combustion engines, the combination with the mixing chamber and the liquid feed regulator, of an inlet nozzle in said mixing chamber, radially arranged air inlets in said mixing chamber above and below said nozzle, means for opening and closing said air inlets and a deflector between said upper and lower inlets, substantially as described.

776,480. Protective Coating for Storage Battery Plates. Achille Meygret, Paris, France. Original application filed June 29, 1903. Serial No. 163,637. Divided and this application filed July 27, 1903. Renewed April 6, 1904. Serial No. 201,915. (No specimens.)

Claim.—1. A protective coating or covering for storage battery plates or electrodes, consisting of an envelope or sheath formed by dipping the plate or electrode, with the active material thereon, into a solution of tetrabutyrat of cellulose, substantially as described.

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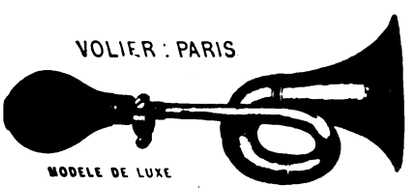
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No other horn enjoys the high reputation that the **VOLIER** has earned. The non-corrosive reeds and the chemically cured bulbs have proved such superior features as to make the VOLIER the standard for motor car equipment. About 80 per cent. of all the cars made this year were equipped with VOLIERS.

THE POST & LESTER CO., 36 Sargeant Street, Hartford, Conn.

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HARLAN BROS.,
St. Louis.

MESSRS. MORGAN & WRIGHT, Chicago.

Gentlemen—After four months' testing of your Clincher tires on a St Louis Motor Car, I am convinced that **they stand without a peer.** I have not suffered the slightest inconvenience in any respect during this time,—a fact that is the more remarkable in view of some very rough usage which the tires have received. You may rest assured that I will strongly recommend them when opportunity affords.

Yours very truly, EDWARD E. HARLAN.

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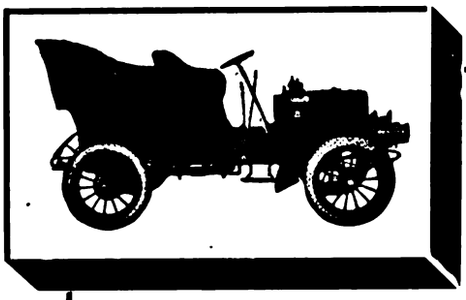
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CLEVELAND CAR SPECIALTY CO.,

CASE AVENUE and LAKE STREET, CLEVELAND, OHIO

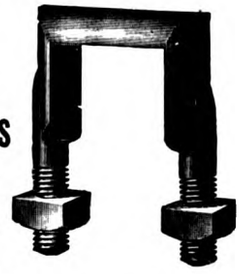
THE M. SEWARD & SON CO.

NEW HAVEN, CONN.

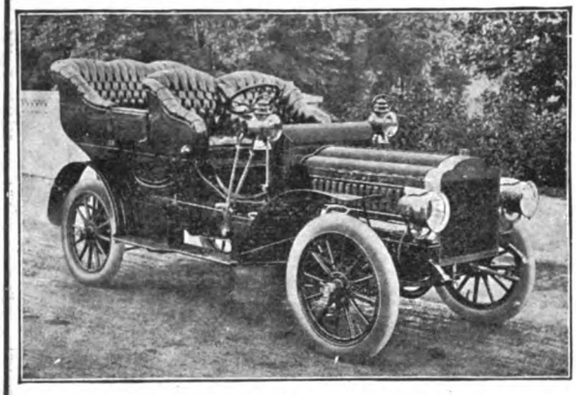


MANUFACTURERS OF

CARRIAGE HARDWARE AND Special Drop Forgings FOR Automobiles AND OTHER WORK.



We are prepared to make estimates from drawings or models and guarantee first-class work.



40 H. P.

THOMAS FLYER.

$3000

Catalogue upon request.

E. R. THOMAS MOTOR CO., 1210 Niagara St, Buffalo, N. Y.

Members of the Association of Licensed Automobile Manufacturers.

The Best Automobile Motors

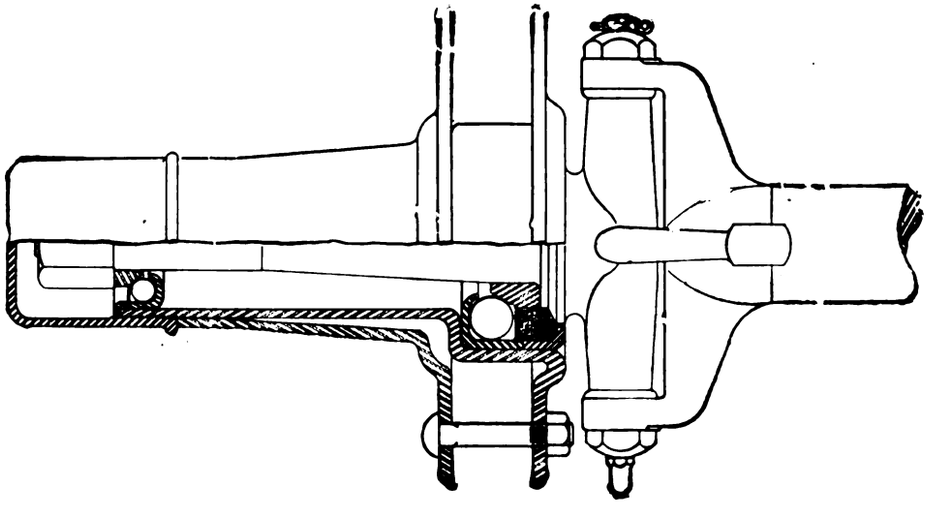
AND

Automobile Charging Machines

ARE MADE BY

THE ELWELL-PARKER ELECTRIC CO,

CLEVELAND, O.



THESE HUBS are drawn from Sheet Steel.

Extremely light and strong Hubs with a smooth surface for finish are obtained.

Center line of Spokes is close to Steering Head. Smooth and Easy Steering is obtained.

Races are GROUND IN POSITION.

Cones and Cone Seats on Spindles are GROUND TO GAUGE.

We manufacture for the trade only.

THE AMERICAN BALL-BEARING CO.

CLEVELAND, OHIO, U. S. A.

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YOU CAN SEE YOUR FINISH

WHEN YOU USE

FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

A big and profitable seller to all jobbers, dealers and garages.

OUR PROPOSITION IS INTERESTING.

Send us a trial order.

FISK MFG. CO., Springfield, Mass.

TALKING RIMS

is a difficult subject.

MAKING RIMS

(the kind that stay true) is an art.

"SWEDOH" Spring Steel Rims

represent the highest achievement of the art of rim-making.

They are used by most conscientious automobile builders and are indorsed by all tire manufacturers.

"Swedoh" Spring Steel Rims

are made by

THE AMERICAN TUBE & STAMPING CO.,

Bridgeport, Conn.

We own and operate our steel billet-making and hot and cold rolling mills and stamping works.

THE ONLY WAY

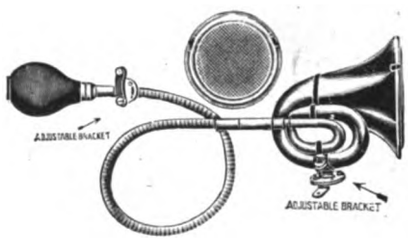
to build automobiles that will stand the test is to use sheet metal parts in place of castings.

WE DO HEAVY AND DIFFICULT STAMPING.

The Crosby Co.,

BUFFALO, N. Y.

LA TUBA HORN



THE latest European idea of a horn. Note extra coil in the body of horn which produces a deep and melodious tone. Two sizes, $10.00 and $12.00 each, complete.

We have in stock forty other sizes and styles of horns. Catalog mailed on request.

CHARLES E. MILLER,

Manufacturer, Jobber, Exporter and Importer,

Home Office—97-99-101 Reade St., New York City.

Retail Branch: Broadway and 38th St., N. Y.City.

Boston Branch: 202-204 Columbus Ave. Boston, Mass.

Philadelphia Branch: 318-320 North Broad St., Philadelphia, Pa.

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Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

Send for Catalog

AUTOMOBILE EQUIPMENT COMPANY
281 Jefferson Street, Detroit, Mich.

Autolyte Lamps, Imported Horns.

A. H. FUNKE,
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QUINBY
AUTOMOBILE-BODY
DEPARTMENT
EMERSON BROOKS, Manager.
1834 Broadway, cor. of 45th St., New York.
Telephone, 6536-38th St.

TOURING CAR

THE F. B. STEARNS CO.,
CLEVELAND, OHIO, U. S. A.

RADIATORS,

TANKS,
MUFFLERS,
FENDERS,
HOODS.



BRISCOE MFG. CO., - Detroit.

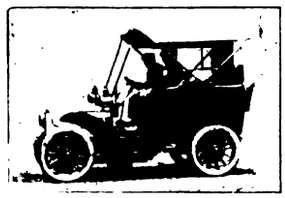
Peerless Motor Cars.

THE PEERLESS MOTOR CAR CO.,
Cleveland, Ohio.

To Operators of Steam Cars:

Write us for printed matter on the NELSON STEAM WATER PUMP, the only positive high pressure boiler feed.

JOHN SIMMONS CO.,
104-110 Centre St., New York.



Springfield Top

PATENTS PENDING.
Aluminum Bodies
Aluminum Fenders
Aluminum Hoods.

Springfield Metal Body Co.,
7 Cypress St.,
Springfield, Mass.

HOMES IN THE SOUTH.

There are in the Southern States awaiting development thousands of acres of uncultivated farm lands in tracts of all sizes, which can be purchased very cheaply. They are productive, healthy, and close to good markets. In ten States reached by the lines of the

SOUTHERN RAILWAY.

For information about opportunities now available, prices of and, character of soils, etc., write to

M. V. RICHARDS, Land and Industrial Agents,
WASHINGTON, D. C., Southern Railway.



The Baldwin Chain Company
— MAKE —
Automobile Chains, Sprockets, Spur and Bevel Gears.

Baldwin Chain & Mfg. Co.,
Worcester, Mass., U. S. A.

THE HILL PRECISION OILER

Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
832 Austin Ave., Chicago, Ill.

Non-Freezing Water Jacket Solution

(SOLVAY PROCESS CO.'S)
will stand 30° below Zero Fahr. without Freezing.
For sale by all Automobile Supply Houses.
THE CARBONDALE CHEMICAL CO., Carbondale, Pa.
NEW YORK, BOSTON, BALTIMORE, CHICAGO, PITTSBURGH.

HIGH-GRADE LAMPS

Acetylene Gas and Oil
ATWOOD MFG. CO.,
Amesbury, Mass.

THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,
9 Packard Ave., Racine, Wis.

THE DUERR-WARD CO., No. 1787 Broadway, New York Distributors.

ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor

THE ACME IMPROVED 1905 MUFFLER.

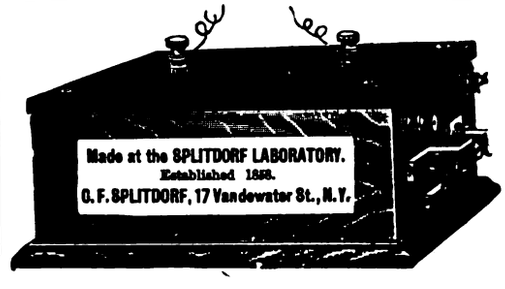


Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

AUTOMOBILE.
STATIONARY.
MARINE.

ACME MOTOR CAR & REPAIR CO.,
Cleveland, Ohio.

Southern Agents: A. L. DYKE, 311 Pine St., St. Louis, Mo.
Eastern Agents: SMITH & EDWARDS, 116 Nassau St., New York City
Western Agents: E. J. DAY & CO., 519 Mission St., San Francisco, Cal.



DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 38 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is located in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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GRAY AND DAVIS

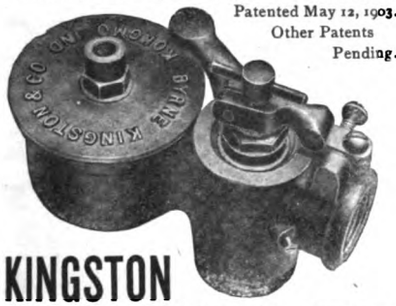
"Makers of Smart Automobile Lamps."

Be Sure YOUR CAR is Equipped With Them. **AMESBURY, MASS.**

Kingston Carburetor.

OVER 22,000 IN USE.

Patented May 12, 1903. Other Patents Pending.



KINGSTON

Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

Pat. Jan. 29, 1901.



TRADE **GRADOMETER** MARK.

An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.

THE ADAMS COMPANY, Dubuque, Iowa.



The FORG GASOLENE BURNER.

Best and Most Effective Burner Manufactured.

PETER FORG, Somerville, Mass.

CHAS. E. MILLER, Agent, New York.



THE R. E HARDY CO., Formerly DETROIT MOTOR WORKS, INC., 1900. 225 West Broadway, New York, N. Y.

P. J. DASEY, 435 Wabash Ave., Chicago.

STA-RITE
"STAYS RIGHT THE LONGEST."

Is the most satisfactory ignition plug in the world at any price. More sold than all other advertised American made plugs combined. 18 sizes. Olds, Ford, Rambler, Northern, Queen, Peerless, Packard, Orient, Panhard etc., $1.50 Winton, Autocar, Thomas, Locomobile, Knox etc., $1.75 Mica plugs $2.00- Cadillac size plug $3.00. New No. 17 size $5.00. Best porcelain obtainable used. Get a set right away. Send for complete catalogue and discounts. Dynamos, Coils, Meters, etc.

THE CASE M'F'G CO. COLUMBUS OHIO.

You Will Not Miss it by Adopting Our Bevel Gear Drive Rear Axle or Our Transmission Gear.

ASK US ABOUT THEM.

THE CASE MANUFACTURING CO., Columbus, Ohio.

We Also Do Special Machine Work.

Send for Circular No. 8.

It you are going to build automobiles you will want this circular. It describes our Axles, Change Gears, Cone Clutches, Mufflers, Steering Gears and other standard parts. All of these parts have been designed with unusual care. They are suitable for cars of all classes.

FEDERAL MANUFACTURING COMPANY, Elyria, Ohio.

Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.

NEW YORK SHOW—Section "D," Concert Hall; CHICAGO SHOW—Gallery Spaces 241, 242, 243 and 244.



THE MANUFACTURERS FOUNDRY CO., Waterbury, Ct.

WILL EXHIBIT SAMPLES OF VARIOUS TYPES OF

CYLINDER AND OTHER CASTINGS

WHICH THEY ARE PRODUCING FOR THE AUTOMOBILE TRADE

At MADISON SQUARE GARDEN, New York City, JANUARY 14th to 21st, 1905, CONCERT HALL—SECTION C.

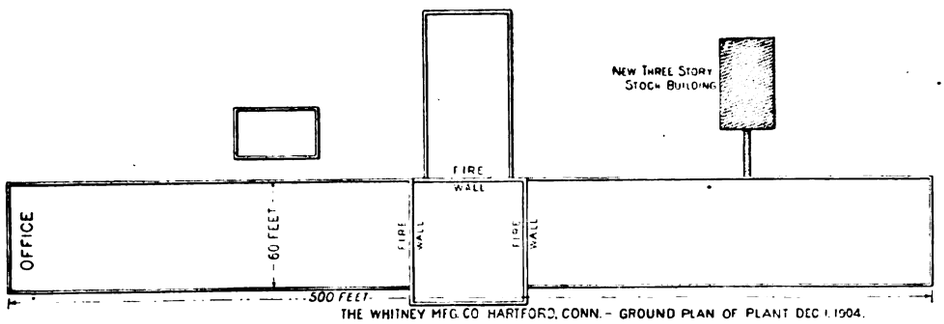
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WHITNEY CHAINS

AND STANDARDS

NOW USED ON

"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "CADILLAC" "COLUMBIA"
"CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN"
"GROUT" "GAETH" "GIBBS" "HARTFORD MOTOR STREET SWEEPER"
"KNOX" "LENAWEE" "MITCHELL" "MOLINE" "MATHESON"
"MANHATTAN" "OLDS" "POPE-HARTFORD" "PIERCE-RACINE"
"PRESCOTT" "QUEEN" "RAMBLER" "STEARNS" "SOMMER"
"SPRINGFIELD" "SNELL" "TOURIST" "WAYNE" "WORTHINGTON"
"WESTERN ELECTRIC"



THE WHITNEY MFG. CO. HARTFORD, CONN. - GROUND PLAN OF PLANT DEC 1, 1904.

Customers should find our new Stock Building an advantage. In it we will carry our Tools, Gauges, Finished Chains, etc., and a large quantity of Chain Parts and Keys and Cutter for the Woodruff Patent System of Keying. We expect to make satisfactory deliveries even if our Manufacturing Departments should be destroyed by fire.

It is our intention to execute chain orders promptly after receiving specifications and commencing January 1st, we will endeavor to fill all orders for Keys and Cutters on the day they are received.

THE WHITNEY MFG. CO., - Hartford, Conn.

WHITNEY
PAT. SEPT. 1904.

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OLDSMOBILE

Two New Commercial Cars.



OLDSMOBILE
10 H. P. DELIVERY CAR.
PRICE, $1000.

The chassis of this car is the same as the Oldsmobile Tonneau Car. The delivery body has a carrying capacity of 45 cu. ft. Wheel base, 82 inches; Oldsmobile carburetor, jump spark ignition, honeycomb radiator, tilting steering post, rear hub and transmission brakes; water and gasolene capacity, seven gallons each. Full details promptly sent to those interested.

OLDSMOBILE
HEAVY DELIVERY CAR.
PRICE, $2000.

This car fully meets commercial requirements. Externally it gives the impression of strength, capacity and endurance. Its construction shows a wonderful development in delivery car building—83 inch wheel base, planetary transmission, two speeds forward and reverse—gears encased and dun in oil—clutch of internal sliding cone type, positive in action—double chain drive from jack shaft to rear wheels—two cylinder vertical engine, 5 in. x 5 in.—15 B. H. P.—carrying capacity 1,500 to 2,000 pounds—space, 87 cu. ft.—engine under seat, making all space back of seat available. Full particulars on request.



OLDS MOTOR WORKS,

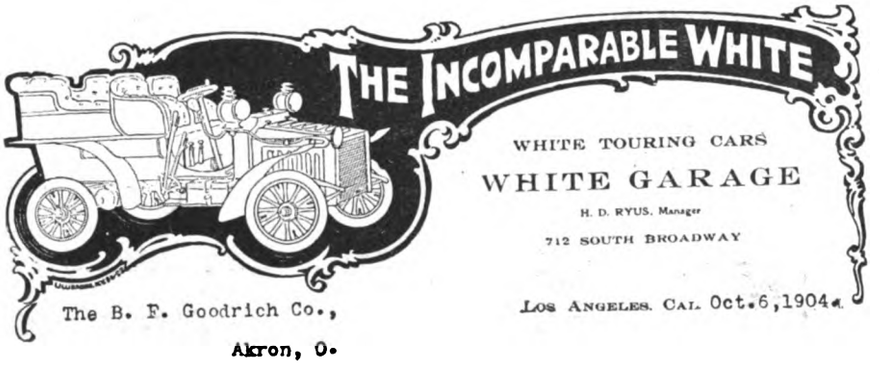
1332 Jefferson Ave.,
DETROIT, - U. S. A.

Member of the Association of Licensed Automobile Manufacturers.

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GOODRICH TIRES

last through a season of hard racing and still in good condition.
Other tires on the same tracks were barely good enough for one heat.
Racing tires must be of the strongest construction. All GOODRICH tires are racing tires.



The B. F. Goodrich Co., Los Angeles, Cal. Oct.6,1904.

Akron, O.

Dear Sirs:-

I am indeed glad to place myself on record as an ardent advocate of your Goodrich Clincher Tire with which I have had four years experience in direct competition with other makes of tires and I truly believe them to be absolutely the best clincher tire on the American market today.

I used a set of Goodrich tires which had been put on my machine at San Francisco in November 1903 and which tires I used for three days hard racing at Ingleside where the car won its first race over Barney Oldfield; it was then shipped to Los Angeles and did two days hard racing here giving Oldfield a hard chase for his money on two occasions; the same car was used nearly every Saturday during the summer and then shipped to Del Monte where it raced two days fast racing winning the two open events with every mile better than 1.04; it was then shipped again to Los Angeles and I can truly say that these tires are still in good condition and ready for more fast work at the coming meet Oct.21st. These tires have never once had a pump put on them after being fitted to the rims at San Francisco last year. All other makes of tires were repeatedly replaced between races and heats at Del Monte; at least six times on one particular car where four different makes of tires were used, none of which I am glad to say were Goodrich.

Yours very truly,

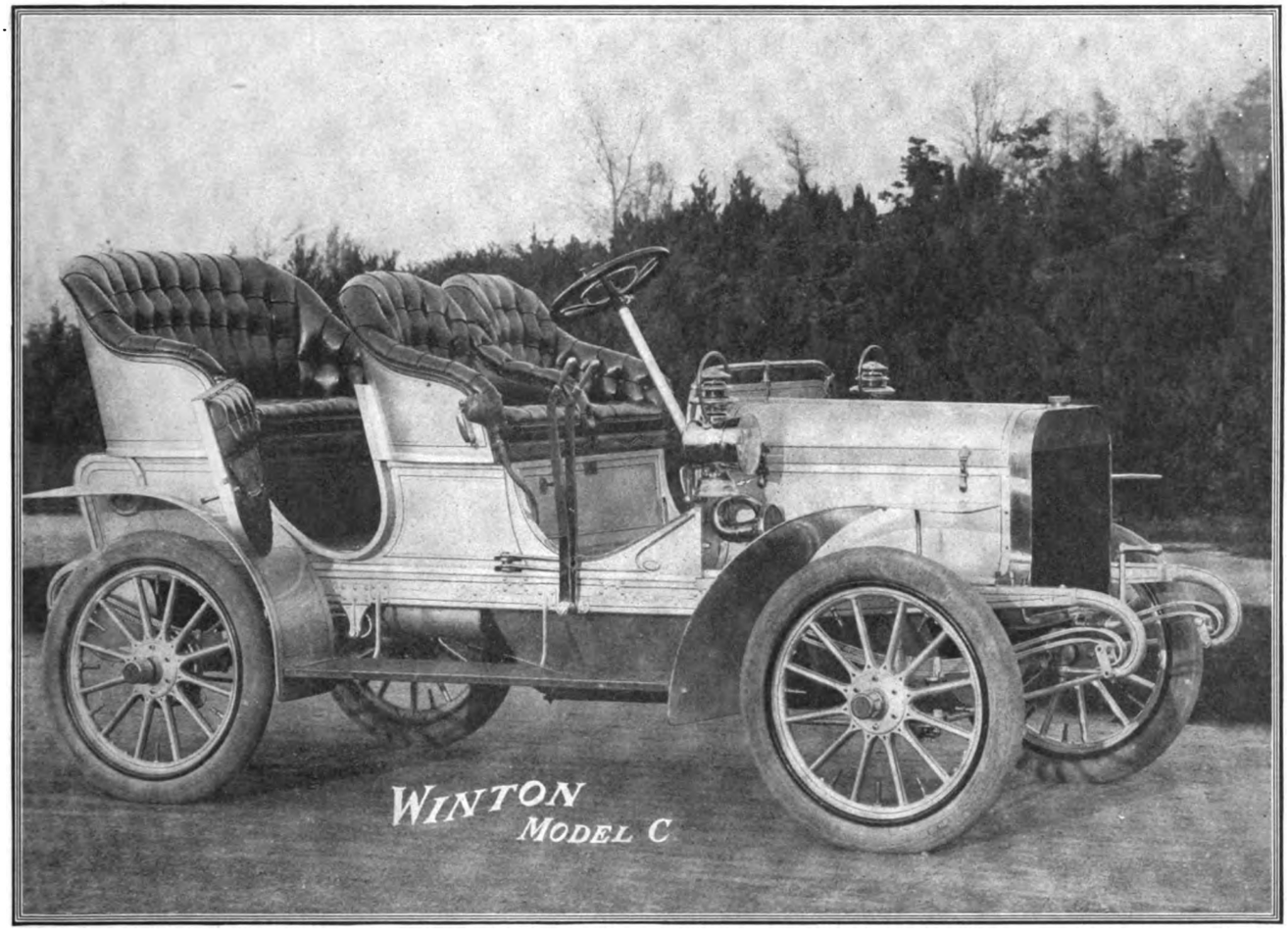
WHITE GARAGE H. D. Ryus Mngr.

THE B. F. GOODRICH COMPANY, Akron, Ohio.

NEW YORK, 66-68 Reade St. and 1625 Broadway. CHICAGO, 141 Lake St.
SAN FRANCISCO, 392 Mission St. BOSTON, 157 Summer St. PHILADELPHIA, 909 Arch St.
BUFFALO, 9 W. Huron St. DETROIT, 80 E. Congress St. DENVER, 1444 Curtis St.
CLEVELAND, 420 Superior St. LONDON, E. C., 7 Snow Hill.

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WINTON



EXCLUSIVE ADVANTAGES.

Purchasers of 1905 WINTON cars secure in our new four-cylinder vertical construction **many exclusive advantages.** These features remove previous automobile faults and make motoring safe, easy and inexpensive.

Easy accessibility. Compensating springs. Automatic air governor. Absolutely sure ignition.
Positive, gear operated lubrication. Simplicity, strength and power.

Catalog No. 3, just out, presents the facts and nothing else. May we send you a copy?

Model C, 16-20 H. P., $1800.
Model A, 40-50 H. P., $3500.
Model B, 24-30 H. P., $2500.
Model A, Special, 40-50 H. P., $4500.

THE WINTON MOTOR CARRIAGE CO.,

MEMBER A. L. A. M.

CLEVELAND, OHIO, U. S. A.

POLAR COMPOUND.
Non-freezing. Keeps water fluid at 10° below zero. Will not chrystalize. Not injurious to metal or rubber. One filling lasts all winter. 5 cents per gallon, f.o.b. Cleveland.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

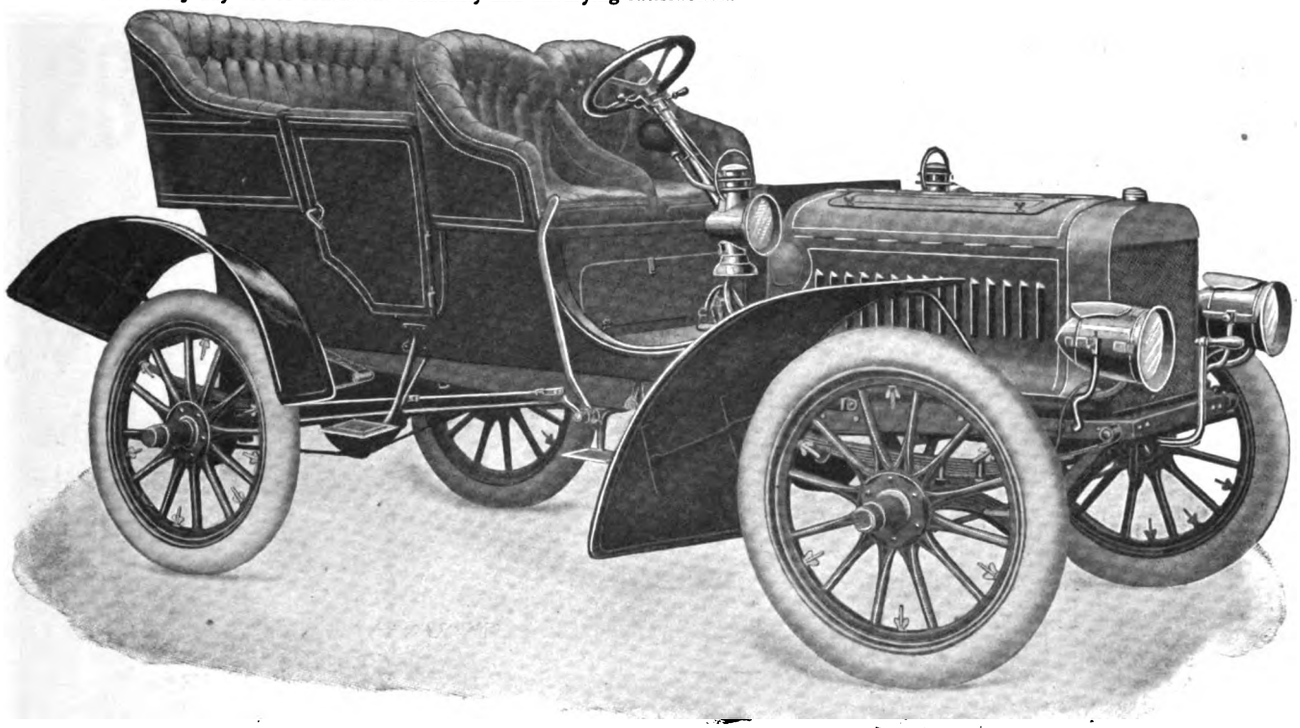
The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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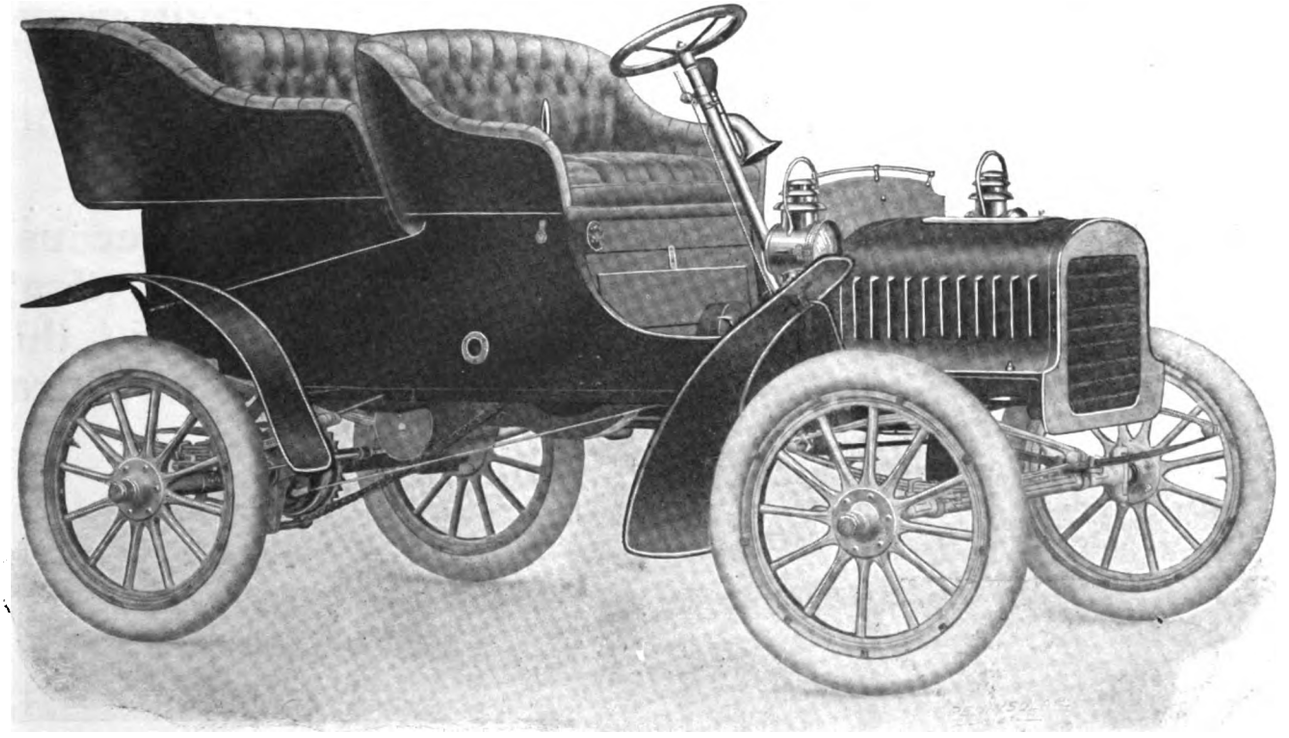
THE RECORD OF THE FORD.

Victory after victory is credited to the Ford light racing car. When you consider that this car gets its power from two of our standard type horizontal motors, you must admit it is proof positive of the correctness of the Ford design and construction for speed, strength and power. The Ford cars have established a record in every day use of consistent reliability and unvarying satisfaction.



MODEL B. Price, $2000.00. Henry Ford's Latest and Greatest Success.

A striking example of the distinctive Ford construction. Weight 1710 lbs. Four-cylinder vertical motor developing over 20-horsepower. This gives our car more power for its weight than any car of equal price in the world. Consequently there is less wear on the tires and ample reserve power for steep grades and sandy roads. Wheel base 9a inches, direct drive with universal coupling, cylinders 4x5 water cooled; automatic oiling devices with force feed, large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car places this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horsepower, planetary transmission, chain drive, and increased gasoline capacity. The most stylish low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. WRITE US TO-DAY FOR FULL INFORMATION.

THE FORD MOTOR CO., Detroit, Mich. See Exhibit, Space G, at New York Show.

JOHN WANAMAKER. Selling Agent for New York and Philadelphia.

Canadian Factory, THE FORD MOTOR CO. OF CANADA, Walkerville, Ont.

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BULLETIN OF
G & J RECORDS

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.

Peerless Green Dragon,
by Barney Oldfield:
9:12 3-5.

WORLD'S TRACK RECORDS,

Peerless Green Dragon,
by Barney Oldfield:

1 mile	0:52 1-5	sec
2 miles,	1:51 1-5	"
3 miles,	2:47 ...	"
11 miles,	10:18 1-5	"
12 miles,	11:15 ...	"
13 miles,	12:12 1-5	"
14 miles,	13:09 ...	"
15 miles,	14:05 ...	"
16 miles,	15:01 ...	"
17 miles,	15:57 ...	"
18 miles,	16:33 ...	"
19 miles,	17:49 2-5	"
20 miles,	18:45 2-5	"

WORLD'S TRACK RECORDS FIVE MILES,

For LIGHT WEIGHT and MIDDLE WEIGHT CARS.

Ford Racer,
by Frank Kulick:

1st	mile, 59	sec.
2nd	" 57 2-5	"
3rd	" 56 4-5	"
4th	" 55 1-5	"
5th	" 55 1-5	"

Total, 4:43 3-5

WORLD'S 1-MILE TRACK RECORD for LIGHT and MIDDLE WEIGHT CARS.

20 H. P. Ford,
by Frank Kulick,
55 sec.

WORLD'S TRACK RECORDS SIX TO TWENTY-FIVE MILES FOR STRIPPED TOURING CARS.

Peerless Blue Streak,
by Charles Burman:

6	miles,	6:24
10	"	10:40
15	"	16:02 2-5
20	"	21:24
25	"	26:50 1-5

WORLD'S 5-MILE TRACK RECORD FOR TOURING CARS.

Pope-Toledo,
by B. F. Dingley:
5:09 3-5.

WORLD'S 1-MILE TRACK RECORD FOR TOURING CARS.

Pope-Toledo,
by George Fuller:
1:00 3-5.

WORLD'S 10-MILE TRACK RECORD FOR TOURING CARS.

Peerless.
by Barney Oldfield,
10:50 1-5.

G&J TIRES
Score Another Victory.

Charles Burman, driving the Peerless Blue Streak at Sacramento, made a new World's Record for 6 to 25 miles for stripped touring cars.

		TIME
6 miles,	-	6:24
10 "	-	10:40
15 "	-	16:02 2-5
20 "	-	21:24
25 "	-	26:50 1-5

THE FASTEST MILE WAS MADE IN 1:02 2-5.

The G & J Tires are fast because there is no internal friction. Isn't it perfectly clear to you that this absence of friction means durability too?

Write us for full information.

G&J TIRE CO.

Factory, 549-617 East Georgia Street,
INDIANAPOLIS, IND.

Branch:
429 Wabash Avenue,
CHICAGO, ILL.

Branch:
247 Jefferson Avenue,
DETROIT, MICH.

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THE *Locomobile*

EASILY THE BEST BUILT CAR IN AMERICA



OUR COMPLETE FOUR-CYLINDER LINE; RECORD FOR RELIABILITY; AND FACILITIES FOR EARLY SPRING DELIVERY WILL INTEREST EVERY DEALER.

15-20 h. p. *Locomobile*—Price $2,800 Complete.

Equipment includes five lamps of the best quality, and full assortment of tools, accessories, and spare parts, all ready for touring. All other models similarly equipped and resemble the 15-20 h. p. car in general appearance. We are in a position to make prompt and early deliveries. Write for advance folder.

1905 GASOLENE MODELS ALL SIDE ENTRANCE CARS

15-20 h. p., $2,800

Mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. 3 speed transmission. Pressed steel frame. Wheel base, 92 in. Weight, 1,800 pounds.

20-25 h. p., $3,700

Automatic inlet valves and jump spark ignition. 3 speed transmission. Channel steel frame. Wheel base, 96 in. Weight, 2,300 pounds.

30-35 h. p., $5,000

Mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. 3 speed transmission. Pressed steel frame. Wheel base, 106 in. Weight, 2,500 pounds.

40-45 h. p., $7,500

Mechanically operated valves, all interchangeable. Make and break ignition, current from magneto. 4 speed transmission. Pressed steel frame. Wheel base, 110 in. Weight, 2,500 pounds.

The *Locomobile* Company of America, Bridgeport, Conn.

Member Association of Licensed Automobile Manufacturers.

NEW YORK, Broadway, cor. of 76th St. / PHILADELPHIA, No. 249 N. Broad St. } BRANCHES { CHICAGO, No. 1354 Michigan Ave. / BOSTON, No. 15 Berkeley St.

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The ELMORE

THE CHOICE OF THE MAN WHO THINKS.

The choice of the man who "puts 2 and 2 together" and realizes the uselessness of using four strokes when two accomplish the same service more satisfactorily and naturally with less wear and tear on the car.

Think it over yourself and then let us mail you our literature. It's uncommonly interesting and instructive.

ELMORE MFG. CO., Clyde, Ohio.

RIM LIFE

means

TIRE LIFE.

"SWEDOH" Spring Steel Rims

are long-lived.

Their use insures long-life to the tires to which they are fitted.

The composition of "SWEDOH" SPRING STEEL is peculiarly adapted to automobile rim building. There's just the right proportion of toughness to keep the rims round and just enough spring to soften the shocks to which a rim is subjected.

"SWEDOH" SPRING STEEL RIMS are now used by most builders of high-class cars, and are heartily indorsed by all tire manufacturers.

Made by

THE AMERICAN TUBE & STAMPING CO.,

Bridgeport, Conn.

We own and operate our steel billet-making and hot and cold rolling mills and stamping works.

FIRE PROOF

EN LA ROSE JE FLEURIE

Hotel Lenox

Boylston and Exeter Streets
Back Bay, BOSTON

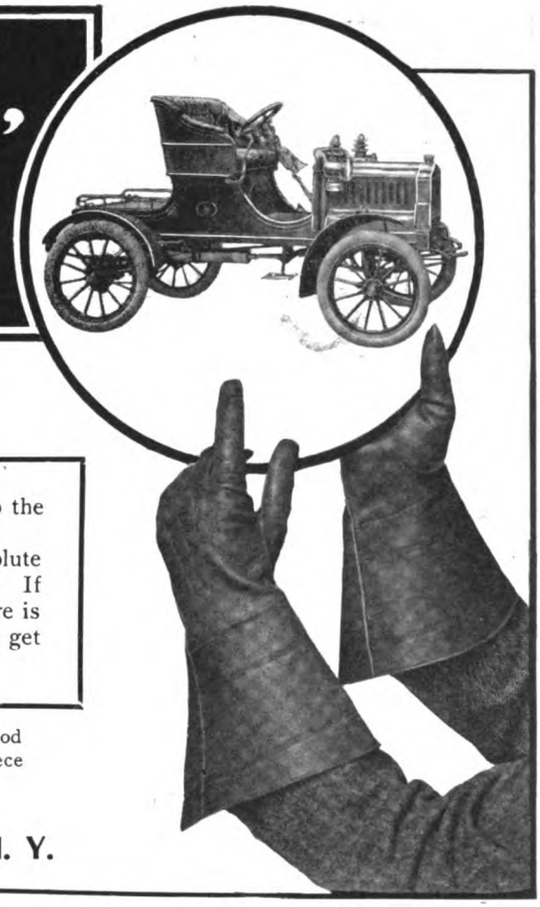
ONE OF THE FINEST MODERN FIRE PROOF HOTELS IN THE COUNTRY. TWO MINUTES' WALK FROM THE BACK BAY STATIONS, AND ONE BLOCK FROM COPLEY SQUARE

CHARLES A. GLEASON, *Manager*

Send for illustrated booklet

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"The Maxwell"



16 H. P. TOURING CAR
Price, for the Present, $1550

8 H. P. TOURABOUT
Price, for the Present, $700

MAXWELL POINTS

are bound to appeal to you on account of their extreme practical value to the average American automobilist.

The small number of parts in "Maxwell" constructions and the absolute simplicity of each part places these two cars in a class by themselves. If you want an automobile that is to be depended upon—one in which there is "nothing to do but ride" and which is a stranger to the repair shop, then get posted as to the "Maxwell." It is the car for *you.*

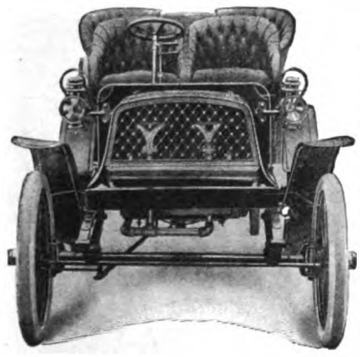
NO PUMP. NO CHAIN. Double opposed motor in front under the hood and easily accessible in every part. Transmission case and crank shaft cast in one piece of aluminum. Noiseless, smooth and strong.

Agencies for 1905 are now being placed.

MAXWELL-BRISCOE MOTOR COMPANY, - Tarrytown, N. Y.

PREMIER

AIR COOLED DIRECT RADIATION



The car for the agent to handle because it makes sales. The car for the driver to buy because it is pleasing in appearance, roomy, light per horse power, embodying only the most up-to-date mechanical ideas and highest grade of workmanship.

"The Quality Car"—Built on Experience and sold on Merit.

Premier Motor Mfg. Co.

INDIANAPOLIS, IND.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This handsomely bound and artistically printed book contains 83 pages and illustrates 76 gasolene cars, one car and its specifications to each page. It is issued primarily for convenience and information to the prospective purchaser of an automobile. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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KNOX Waterless Commercial CARS

STAND AS LEADERS

Among business Vehicles *Knox Waterless Cars* stand as leaders. They excel in economy of time and money saved, in service rendered, in practical and scientific mechanism, and in ease of operation. They give dignity to the firm that employs them, and serve as a constant advertisement. All worry is eliminated—no water to freeze, no complicated machinery to care for.

Call at our agents' and have a free demonstration, or send for commercial car tests.

For Service Buy a Waterless Knox.

KNOX AUTOMOBILE CO., Springfield, Mass.

Members Association of Licensed Automobile Manufacturers.

Will exhibit at the Automobile Show, Madison Square Garden, New York, Jan. 14th to 21st, 1905.

THE MICHIGAN

LIGHT TOURING CAR FOR 1905

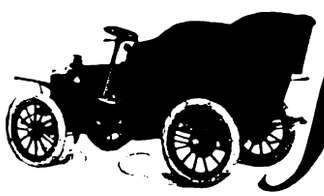
WILL CONSIST OF TWO MODELS, "D" AND "E"

Both will be equipped with the Michigan 2-cylinder 14-H. P. motor, which has proven so satisfactory the past season. Model D will have a removable tonneau and rear entrance, Model E a stylish side entrance body of very swell handsome design. Both have French bonnets, expanding hub brakes, and many other excellent features. Prices reasonable.

New catalog will soon be ready. Send in your name. Write for agency.

Michigan Automobile Co., Makers,

KALAMAZOO, MICH.



Auto-Talks

No. 3

In taking up the subject of performance in this "Auto-talk" we realize that our space is too limited to permit of thoroughly covering the subject. First, however, we will say that it is not our intention to offer as sole evidence of Autocar efficiency professional "records" or exhibition trials.

While the Autocar can show its share of these records, we believe that the average prospective purchaser is more interested in knowing the day-in-and-day-out behavior of the cars than in statements that they carried off such and such honors in such and such a contest. Following we print one of the many letters received from satisfied Autocar owners, because it tells of what was simply a private test of the car and in many respects an every-day trial.

WORCESTER, MASS., Sept. 24, 1904.

THE AUTOCAR COMPANY.

It may be of interest to you to know that I have just returned from a trip to Burlington, Vt., in an Autocar runabout, making the run in fourteen hours and twenty minutes, the distance being 236 miles over rough hilly country. In view of the fact that I had only *oil side lights* and four hours of the run was after dark it will be seen that the time was pretty fair. Over the mountain was the worst of the going, of course, but I seldom had to resort to the low gear, and then only for the *very steepest* pitches. The car is a wonder, and my companion got an eye opener in dead earnest.

The car gave absolutely no trouble except one tire, which I replaced at Rutland, as the tube was pinched.

The way it slid up those mountain roads was a caution to the natives.

Yours truly,

H. E. SHILAND.

While we make no claims for the Autocar as a purely racing machine, its maximum speed of 35 miles an hour is, however, high enough so that the Autocar driver can feel he has a car to "eat upthe road" if necessary.

The points which we do emphasize in Autocar performances are these: Reliability under all conditions of roads and weather; ability to negotiate any traveled grade; extreme ease and simplicity of control, including brakes sufficiently powerful to stop the car in the minimum distance; simplicity and perfection of mechanism with consequent freedom from derangement; easy accessibility of all parts, and absence of vibration.

The Autocar has a speed range of from 3 to 35 miles an hour, and will travel 175 miles with one filling of the 10-gallon gasolene tank.

To give you a more practical idea of Autocar performance we will say that our dealers all over the country have cars for demonstrating to any intending automobile purchaser. Our booklet, which we will be glad to send you, gives full details of Autocar construction and name of our dealer nearest you.

THE AUTOCAR COMPANY, - Ardmore, Pa.

Member Association Licensed Automobile Manufacturers.

Now is the Time

to submit your

SPECIFICATIONS

for

FORGINGS

to insure prompt deliveries.

We are ready.

Don't delay.



THE BILLINGS & SPENCER COMPANY, Hartford, Conn.

Makers of

Drop Forgings of every Description.

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The ROYAL TOURIST
FOR 1905.

32-38 H. P.—(ACTUAL TEST).

$3000.00—STANDARD EQUIPMENT.

DELIVERIES GUARANTEED.

Get in line and write for Advance Booklet NOW.

ROYAL MOTOR CAR COMPANY, Cleveland, Ohio.

NEW ENGLAND AUTOMOBILE CO., Boston and New England.

DUERR-WARD CO., New York and Vicinity.

HARRY BRANSTETTER CO., Chicago and Vicinity.

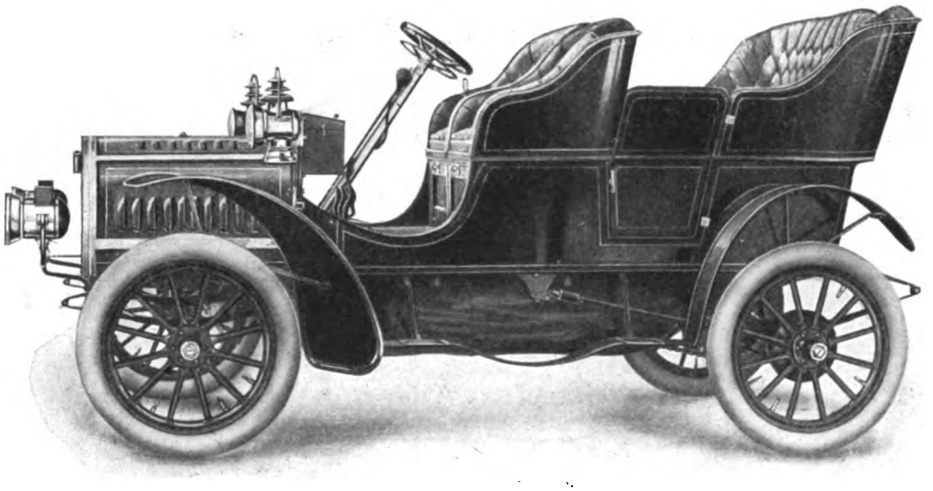
Haste Makes Waste.

Don't be in a hurry to place your order for 1905. Wait until you have seen the new ORIENT cars; there are some things about them that will surprise you. Write us now so that we can send you photographs and keep you posted. You want the latest and best and we have it. "Any old car" will not sell this season, they must be up to date. It will not cost you much to write.

WALTHAM MFG. CO., Waltham, Mass.

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Rambler



SURREY, TYPE ONE. 1905 Model.

2 CYLINDERS, 16 H.P., $1350. IMMEDIATE DELIVERY.

Thursday afternoon, October 13, Arthur Gardiner, whose name was formerly well known on the cycle track, and who now is final tester of every RAMBLER car made, drove the writer in a new Surrey, Type One, for a twenty mile run about Kenosha. The country is perfectly flat, and the black soil makes poor roads, deeply rutted, so that this high speed run furnished no hill climbing, but plenty of spring and power testing, as a narrow, deep rut made by farm wagons in soft roads pinches pneumatic tires, and tests the springing by side crooks. Part of the time the car had four passengers and part of the time it was on very bad, soft, muddy, uneven roads, always riding very smoothly, without the slightest tremble of the free front ends of the mud guards, which is most convincing proof of entire absence of vibration, and always with abundant power to spare. The car is as still as it should be, silencing perfect, no bouncing, easy side swing, and prompt response in every particular of control.—HUGH DOLNAR, page 86, *et. seq.* *Cycle and Automobile Trade Journal*, November, 1904.

We shall be pleased to send you a copy of THE RAMBLER MAGAZINE, and other printed matter, free, upon request.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 304-306 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

NEW YORK AGENCY, 134 West 38th Street. REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, December 15, 1904. No. 12

TWO DAYS SESSION

Licensed Manufacturers Discussing Matters of Moment—Engineers' Branch Advanced.

While no inkling of its nature has been permitted to escape, that the executive committee of the Association of Licensed Automobile Manufacturers is engaged with matters of moment is indicated by a meeting at its offices in New York, which lasted all of yesterday and will be continued to-day; two days' sessions are not usual. It is frankly stated that business of importance is being transacted, but it is added that it is not for publication.

The two items of news that have been disclosed is the ratification of the transferral of the Crest license to Alden Sampson, 2d, of Pittsfield, Mass., and the furtherance of the projected engineers' branch of the association.

The latter was given impetus on Friday last, when the committee of five engineers appointed for the purpose met at the Engineers' Club, New York, and decided that such a branch was both feasible and desirable. A general meeting of all the engineers and superintendents in the association will be called for January 19, which falls during the New York show. At that time the organization will be formally completed. It will be styled the Superintendents' and Engineers' Branch of the Association of Licensed Automobile Manufacturers. It will, of course, deal entirely with constructional features and act in an advisory capacity, the aim being, as was stated when the project was first broached in October last, the study of methods and exchange of ideas that will render possible simplification of construction, the standardizing of certain parts, the reduction of factory costs, and, with it all, that reduction of the cost of automobile maintenance that is desired not less by users than by makers.

The "committee of arrangements," as it may be styled, were A. L. Riker, chief engineer of the Locomobile Co. of America; George W. Wesley, superintendent of the Electric Vehicle Co.; Henry W. McComb, superintendent of the Autocar Co.; Karl Almquist, chief engineer of the Worthington Automobile Co., and J. Frank Duryea, chief engineer of the J. Stevens Arms & Tools Works.

Fire Destroys Fifteen Oldsmobiles.

Of the fifty or more cars in the garage of the Oldsmobile Co., of Cleveland, Ohio, which was attacked by fire last week, fifteen were entirely destroyed and ten more damaged. The loss is placed at $10,000.

Neither the police nor the firemen have been able to discover how the fire started. The building is located at No. 411 Euclid avenue, and contains, in addition to the garage, the Euclid Avenue Bowling Alleys. More than a hundred people were in the latter when the fire started, and they fled as soon as the smoke began to appear. The flames spread rapidly, and by the time the fire engines arrived a number of the cars were on fire. The remainder, amounting to about half the total, were run out before the conflagration spread to them.

Fox Organizing Big Company in Syracuse.

It is reported from Syracuse, N. Y., that Charles A. Fox, of that city, is engaged in the formation of a company with a capitalization of $450,000, to manufacture automobiles. The company, it is said, will manufacture a touring car exclusively, which is to sell for $2,500. The papers will soon be ready to forward to Albany for incorporation, and then a factory will be secured.

Will Make Aluminum Bodies.

The Michigan Steel Boat Company, of Detroit, are preparing an attractive line of aluminum bodies, which are expected to be ready for the market in a short time. The designs for these bodies were worked out after the return of F. E. Wadsworth from abroad, where he made a study of the prevailing foreign types.

Adams Joins the Olds Staff.

Walter O. Adams, formerly treasurer and manager of the Crest Mfg. Co., and later with the Ford Motor Co. as assistant to Manager James E. Couzens, has resigned to take charge of the foreign department of the Olds Motor Works.

SAMPSON GETS CREST

Pittsfielder Buys Stock and Selden License of Cambridge Concern—His Plans Outlined.

After all, the Crest Mfg. Co. will not go out of business. The "For Sale" sign on the factory at Cambridge, Mass., or something else, attracted a purchaser in the person of Alden Sampson, 2d, of Pittsfield, Mass., and the latter is now the possessor of the entire capital stock of the Crest Mfg. Co. and of the material on hand, and also of the Selden license, which goes with the capital stock, and makes Sampson a member of the Association of Licensed Automobile Manufacturers.

It is understood that Mr. Sampson will produce as many Crest cars as the material on hand renders possible, performing the work at the Crest factory. Later he will manufacture a large car of his own, and ultimately remove the business to Pittsfield, where he has a considerable plant, and where only this month he purchased property for an enlargement of it.

Mr. Sampson formerly built the Moyea car for the defunct Moyea Automobile Co., and last spring entered a car for the Bennett Cup race, which was not, however, completed in time.

Russians Place Large Order.

The Northern Mfg. Co., of Detroit, Mich., are pluming themselves this week, and not without reason, over an order received from Russia for forty of the new Northern touring cars. Incidentally, this order has been the source of considerable satisfaction to Peter Fogarty, the New York agent of the company, who only recently returned from abroad.

Hartford Opens in Los Angeles.

The Hartford Rubber Works Co. has purchased the plant of the Williams Rubber Co., at No. 118 East Ninth street, Los Angeles, Cal., and will continue the establishment as a branch house. H. O. Harrison, former manager of the place, will be retained in that capacity.

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BUICK IN JACKSON

Big Maker Selects Michigan Capital for Headquarters—Will Not Make Runabouts.

Advices from Jackson, Mich., state that it has been decided to concentrate the office and sales departments of the Buick Motor Co. at that place. The Buick plant in Flint will, however, continue to be operated and will produce the motors, while the other work will be done in Jackson.

Steps are now being taken to make the changes necessary to adapt the factory to the purpose of automobile manufacture, and it is expected that by February 1 cars made at the Jackson plant will be ready for the market. It is not intended to entirely discontinue work at the Flint factory at present, however. The force of men now there will be continued, and parts of the Binck car will be made; these will be taken to Jackson, where the work of assembling will be done.

It is the intention of the Buick Co. to turn out 1,200 cars during 1905. These will all be of one type—the 22 horsepower tonneau car, which made such a splendid showing at the Eagle Rock Hill climbing contest on Thanksgiving Day, and which lists at $1,200. It has been decided not to make a runabout model.

Wants Them Adjudged Bankrupt.

Efforts are now being made to have the Motor Vehicle Co., Louisville, Ky., declared a bankrupt. The concern, in which E. R. Thomas, of this city, is a stockholder, it will be recalled, made an assignment to J. S. Tracy a couple of weeks ago. The present proceedings have back of them the Charles C. Stoll Oil Co., Albrecht & Heick and the Louisville Gunning System. The petitioners, whose claims amount to a little less than $1,000, allege that the company, in making an assignment to J. S. Tracy, committed an act of bankruptcy. The petition further states that Tracy is believed by them to be a stockholder in the company.

Through R. Wortham Otter, president, the Motor Vehicle Co., consented to an adjudication in bankruptcy, admitting that they had been insolvent for four months prior to the time of filing the deed of assignment, which they admit was an act of bankruptcy. Judge Evans appointed O. G. Holt receiver in bankruptcy.

Won't Pay 25 Per Cent.

In the New Jersey Court of Chancery last week Vice-Chancellor Bergen appointed Justice Von Minden receiver of the Plainfield Auto Garage Co., the embarrassment of which was noted in last week's Motor World. Counsel for Andrew E. Wilson made the motion for the appointment of a receiver, claiming the company was bankrupt and insolvent. Justice Von Minden, counsel for William B. Smith, a stockholder in the company, was in court for the purpose of arguing against the appointment of a receiver, but he did not oppose the motion.

According to Judge Codington, counsel for Wilson, the liabilities of the concern are $2,500; assets unknown. The affairs of the company are in such bad shape that it will be impossible for creditors to receive as much as 25 cents on the dollar. The chief creditor is Andrew E. Wilson, who invested about $1,600 in the company.

Will Make Lamps, Will Burn.

W. S. Burn, an East Orange, N. J., manufacturer, has purchased from the receiver the plant of the Housatonic Mfg. Co., of New Haven, Conn. He will reorganize it and style it the General Mfg. Co. Under that name he will continue the manufacture of the Housatonic Co.'s line of goods, and add automobile lamps and other automobile parts.

Couzens Sweeping the Coast.

That the Ford Motor Company means to obtain its full share of the Pacific Coast trade is evidenced by the sweep that James E. Couzens, secretary and general manager of the company, is making of that portion of the country. He is visiting practically every point of promise, and will not return to Detroit until after the holidays.

Marion Completes New Plant.

The new plant of the Marion Motor Car Co., Indianapolis, has been finally completed, and will be occupied within a few days. It is of two stories, 60 by 120 feet, and in it will be located the offices and the assembling, finishing and body building departments. The machine work will be continued in the old shop, which adjoins the new one.

Disputed Repair Bill Leads to Law.

A deputy sheriff last week attached a racing car belonging to George H. Flinn, of Pittsburg, Pa., at a Forty-third street garage, in this city. He had previously received an attachment against Flinn for $1,329, in favor of Smith & Mabley, to cover a claim for repairs and storage. Flinn claims that the charges are excessive.

Church Retires From Business.

Norman W. Church, the well known Los Angeles dealer, has, on account of ill health, been compelled to sell out his business and go to Honolulu, where it is hoped the climate will have a beneficial effect. Church sold out to the Messrs. Anthony, who operate as the Western Motor Car Co.

Pattee's Claim for Kansas City.

Among the visitors to the Cadillac factory at Detroit last week was Fred Pattee, of the Cadillac Company, of Kansas City. Pattee affirms that Kansas City is a "Cadillac town," and points to a record of eighty-two cars sold there during the past season.

NORTHERN'S NEW LINE

Changes Made in Construction and Price—Choice of Four Bodies Offered.

Two models will constitute the Northern line for 1905, viz., the time-tested and popular runabout and the touring car which made its appearance at the New York show in January last. The former is retained practically unchanged. Divided or bucket seats have been substituted for the straight ones formerly used, and the price has been reduced from $750 to $650.

The touring car will be made with four styles of bodies—a side entrance, with seat facing forward, a detachable tonneau, a permanent tonneau and a single seat (two passenger). These are priced at $1,700, $1,600, $1,500 and $1,400, respectively. The double opposed horizontal engine, with cylinders positioned transversely, is retained in this model, but the cylinder dimensions have been increased from 5x5 inches to 5 1-4 by 5 1-4 inches, with the result that the engine now develops 18 H. P., instead of 15, as heretofore. The wheel base is 102 inches, as against 84 inches this year, giving plenty of room and insuring a corresponding freedom from vibration.

Packard Out; Maxwell Moves In.

No sooner had the Packard effects been removed from the building at 317-319 West Fifty-ninth street, this city, where the Packard branch has been domiciled for several years, than painters and decorators were put to work preparing the place for the debut of the Maxwell-Briscoe Motor Company, of Tarrytown, N. Y. The latter have, as stated several weeks ago, leased the premises and will occupy them as a branch house, with Colonel K. C. Pardee as manager. The plate glass front now bears the lettering "Maxwell Motor Cars," with the concern's catchy motto, "Perfectly Simple, Simply Perfect," underneath in smaller characters.

Buick Apportions Territory.

Orlando F. Weber, the well known Chicago and Milwaukee agent, has closed with the Buick Motor Company for Illinois and Wisconsin. In New York and Philadelphia, the Buick will be handled by the Electric Vehicle Company.

Broad to Start in Alpena.

H. L. Broad, of Alpena, Mich., will engage in the automobile business shortly after the first of the year. He has arranged to carry four lines of cars, and will also do a repairing business.

Smith in Foreign Lands.

F. L. Smith, general manager of the Olds Motor Works, is now on "the other side." He sailed so quietly that few knew of his departure.

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THOMAS TALKS IN PARIS

Buffalo Manufacturer Lets Fall a Prediction for the Benefit of the Frenchmen.

E. R. Thomas, the Buffalo manufacturer, who is at the Paris show, has expressed himself as more confident than ever before of the great future of American automobiles, according to a cable dispatch from the French capital.

"Americans will be shipping automobiles to Paris within three years," declared Mr. Thomas. "Undoubtedly the French were ahead of us at first in mechanical equipment and methods of construction. Labor here is 15 cents an hour; at home it is 22 to 25 cents, but the superior quickness of our workmen evens this up. We can obtain material much more cheaply than the European makers can, and the price of material here is increasing rapidly. It may be that a prohibitive duty will be levied in France to keep our machines out, but we are certain to have the patronage of the rest of Europe.

"Since we adopted French designs, beginning where they left off, we have been in a fair way to surpass them. The French makers had an early advantage, due to situation and accessibility of mechanism, but even at the present time American manufacturers give more for the money than the firms here do. In America machines of 40 horsepower are sold for $3,000, while here that much money is demanded for cars of 20 horsepower. We build four hundred cars at once on the chance of prospective orders, while the French build one at a time, following orders. The present demand here and at home is for high powered machines."

Gilbert Appointed Sales Agent.

Le Roy Pelletier, manager of the Duquesne Motor Car Company, of Jamestown, N. Y., was in Detroit during the past week. With him was Joseph Gilbert, of the Firestone Tire and Rubber Company, who, in conjunction with his present work, will act as sales agent for the Duquesne Motor Car Company. As stated in last weeks Motor World, this company has been placed firmly on its feet by the introduction of capital from Jamestown and Erie and Corry, Pa.

Drawing Tight the Selden Line.

How closely members of the A. L. A. M. are adhering to its rules, and particularly that one forbidding the handling of licensed and unlicensed cars by the same concern, is shown by recent changes in the American Automobile Storage Company, of this city. That concern this year sold the Olds and another licensed car at its store on Sixtieth street, while the Oldsmobile Company, of New York, did the same on Thirty-eighth street. When Ray M. Owen, who was a large stockholder in and secretary and general manager of both concerns, became general sales manager for the Reo Car Company, and the Harrolds Motor Car Company acquired the agency for the Olds, it became necessary to divorce the Sixtieth and Thirty-eighth street establishments, as the Reo is outside the A. L. A. M. fold. This was done, the Reo offices and salesroom being located in the Thirty-eighth street premises. Even this was not enough, however, so Owen resigned as an officer of the American Company and E. S. Comancho was elected secretary. Thus Owen ceases to have any official connection with the American Company, which will continue to handle the licensed car referred to.

The Week's Incorporations.

Mishawka, Ind.—Simplex Motor Car Co., under Indiana laws, with $100,000 capital. Directors—E. D. Gulick, Rudolph Kamm and H. L. Bell.

New York, N. Y.—Maxwell-Briscoe, under New York laws, with $25,000 capital; to make automobiles. Directors—Benjamin Briscoe, J. D. Maxwell and Richard Irvin.

Portland, Me.—National Electric Construction Co., under Maine laws, with $500,000 capital; to manufacture electrical machinery and appliances. President, M. W. Baldwin, and treasurer, G. C. Knight.

Detroit, Mich.—Rapid Motor Vehicle Co., under Michigan laws, with $100,000 capital; $3,000 paid in, and $22,000 in machinery, automobiles, etc. Stockholders—Albert Marx, Barney Finn, Celia Grabowsky and Max Grabowsky.

Norfolk, Va.—Virginia Automobile Co., under Virginia laws, with $25,000 capital; to buy, sell, manufacture, own, lease and construct automobiles, etc. Officers—Moses Nushbaum, president; J. Roy Collins, secretary, and J. J. Hennelly, treasurer.

New Haven, Conn.—General Mfg. Co., under Connecticut laws, with $500,000 capital, $325,000 paid in; to manufacture automobile fixtures and lamps. Corporators and officers—W. S. Burn, president; S. C. Morehouse, secretary and treasurer, and Arnon A. Alling.

New Firm Formed in Worcester.

Norcross & Shiland is the style of a new firm in Worcester, Mass., that starts with excellent prospects, having already secured the Pope-Toledo and Autocar agencies. The members of the firm are Jesse O. Norcross and H. E. Shiland, the latter of whom has had four years' experience with B. A. Robinson, the veteran Worcester dealer. They will occupy the new store at No. 210 Summer street, comprising two stories and basement, 36 by 100 feet.

Here Comes the Boss.

J. E. Long and John Crawford, of Massillon, Ohio, have formed a co-partnership, under the style of the Long-Crawford Automobile Co., and will begin to assemble and sell a four cylinder gasolene car, to be named the Boss. It will develop 24 horsepower, and will have a side entrance tonneau body.

KIRK BACK FROM COAST

Speaks Enthusiastically of Conditions There and Tells What is Worrying the Dealers.

From all accounts, if one particular part of the country is to prove a "happier hunting ground" for the automobile trade than the other parts, the Pacific Coast is the one.

Ezra E. Kirk, of the Consolidated Mfg. Co., who returned to the factory at Toledo last week after a six weeks' visit to the country beyond the Rockies, is the most recent traveller to bring reports of the rose-hued conditions that exist there. He fairly bubbled with the enthusiasm he had contracted. Automobile interest, he states, is at fever heat, and evidence of it is to be seen and heard on every hand. The dealers, with scarcely an exception, are on the anxious seat, not for lack of orders, but because they have booked so many of them that they are fearful of delayed deliveries. Their season beginning so much earlier than is the case in the East, they want the new models now, and have not been able to obtain enough of them.

According to Mr. Kirk, these conditions prevail all the way from Los Angeles to Portland, Ore.

In San Francisco, he says, the rental trade has assumed proportions scarcely dreamed of elsewhere. In front of all the leading hotels, says Mr. Kirk, are long lines of rental cars, not electric cabs, but full touring cars, for which patronage is not lacking.

The Elmores for 1905.

R. C. Cornwall, of the Cornwall Automobile Co., Syracuse, N. Y., one of the many agents who took up the Elmore cars last season, to discover in them a veritable "find,' was among a considerable number who visited the factory at Clyde, Ohio, last week, to renew contracts for the ensuing year. The Elmore line for next year, consisting of the 16 horsepower twin cylinder two cycle engines, side entrance car, listing at $1,250, and a 10 horsepower single cylinder detachable tonneau car, at $950, have elicited the warmest commendation. The Elmore people say that, contrary to the general impression, the majority of agencies are not waiting for the show to close contracts, adding, significantly, "They know better." Which remark may convey a world of timely information to the dealers likely to be interested in Elmores.

Colt's Car Christened "Cleveland."

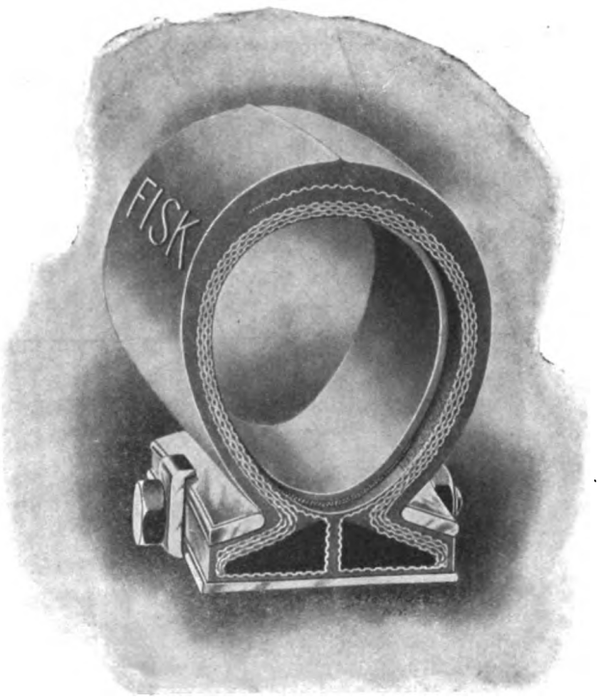
The Cleveland Motor Car Co., with W. L. Colt at its head, the organization of which was exclusively reported in last week's Motor World, has located its executive offices and salesrooms at Nos. 388 and 390 Erie street, Cleveland, Ohio. The car, formerly the Meteor, will be styled the Cleveland, and will, of course, employ an 18 horsepower vertical four cylinder motor. It will list at $3,000.

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THE MOTOR WORLD

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CABLE ADDRESS, "MOTORWORLD," NEW YORK

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NEW YORK, DECEMBER 15, 1904.

Time the Sleighs.

Although it is difficult to conceive how the Massachusetts law can be made more oppressive, it is stated with every appearance of truth that certain Bay State motorphobes will ask the legislature to still further "pile on the agony." In support of their prayer they will submit an accumulation of "evidence" in the form of reports or affidavits by men who spent the summer in timing automobiles in various parts of the State.

Whether or not evidence of the sort is brought to bear, it will be well for the Massachusetts automobilists and those of New York, New Jersey, Connecticut and other States to fortify themselves by timing the horse drawn sleighs just now so numerously in use. It is really an opportunity that should not be permitted to pass unembraced.

We believe it will be shown that the vehicles on runners average double the speed of the vehicles on wheels, by night as well as by day, and that their drivers are never arrested or in any way molested by the police. We believe it will be shown that when guiding a sleigh, the gentle farmer, the grocery boy, the milkman and all the other "poor men," who, according to Magistrate Crane, make our laws, are as persistent violators of the speed ordinances as the richest and most arrogant automobilist who ever drew the breath of life.

By all means let us have records of the sort. They can be used to good advantage whenever and wherever motorphobes raise their heads. It is a work in which all local clubs should engage, and by no means should the farmer folk be overlooked. Given a vehicle capable of speed, they are as prone as any one to travel fast.

Instalment Sales.

It is not often that the trade is a unit on any subject, but it would be difficult to find much difference of opinion regarding instalment sales of automobiles. As one tradesman put it bluntly, "After instalments will come the deluge. This is putting the case rather too strongly, for other businesses has gone through the instalment ordeal and come out alive and hearty; the piano trade being a conspicuous instance, and sewing machines another, not quite so rose-hued. That the automobile should escape, when it is almost marked out for the trying experience owing to the wide extension its use will eventually undergo, seems too much even to hope. Even the most optimistic observers do not expect permanent immunity.

Indeed, the entering wedge has already been observed seeking entrance. In Chicago last year a department store tried the plan of selling cars on instalments, while an automobile dealer in Washington is said to be preparing to follow the example. No marked success attended the former venture, perhaps because it was gone about very cautiously; while of the latter it is already prophesied that one season's trial of the plan will put the daring dealer out of business. That is prejudging the case, however.

It is scarcely necessary to say that endless arguments can be urged against instalment sales, and not one good one for them. Even the plea of necessity does not hold good. There is no excess of cars, and customers are to be found for all of reputable make that are produced. To deviate from the cash system now in universal use is to invite disaster without any corresponding gain in the unlikely event of success. No sane business man will bring himself to do this.

"To permit a piece of mechanism like the automobile to get into the hands of inexperienced users by the payment of only a tithe of the purchase money is foolish almost to the point of criminality," declared one tradesman to us recently. "He can ruin it at any time, or he may at any time unintentionally damage it to an extent greater than his equity in the vehicle. Could it reasonably be expected, then, that such a man will continue to meet his payments promptly? Why, if he can do this only by dint of strict economy, how will he do it when he has a big repair job to pay for? Or could it be expected that he would meet his payments and let the car stand idle until everything was settled? Certainly not."

Heretofore dealers have said to the instalment charmer, "Get thee behind me, Satan," and they probably will continue to do so for years to come. A further safeguard is the maker, without whose assistance few, if any, dealers can do an instalment business. It is pretty safe to say that they will prevent any driving home of the wedge, for they know too well the certain and speedy disaster that would follow the adoption of the system.

The Purchase of Special Steels.

In reaching out for special grades of steel to fill certain purposes there is one pitfall that the unwary must beware of.

It is the steelmaker who is not in the habit of taking care of special orders, who could do it perhaps if it was commercial, but it seldom is commercial. He has no men whose special business it is to look after special orders; he has no system in shipping, whereby such orders are followed to a finish with absolute certainty that the customer gets what he wants and what he asks for. Once in a while, however, a firm of this kind gets hungry for business and will accept such an order, and will even make very flattering quotations below what the conservative maker could make. He will take the order; then will come a rush of business that is more profitable to him, and the special order will never be properly filled.

It is much better to pay the price demanded by the systematic producer of specialties, because you get what you want, what you need and what you must have.

A good illustration of this was the purchase of a lot of open hearth die blocks by a concern under just such conditions. The steelmaker wanted the order, and promised anything and everything at a low price.

The die blocks arrived after a tremendous

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delay, and without analyzing them or seeing whether or not they were what was asked for, the drop forger started in to use them. All sorts of difficulties were encountered during the hardening of the dies. Then the drop forger had some of them analyzed. The results showed the best of reasons for the bad behavior of the dies.

In the first place they were not alike, there were several qualities of steel among the lot. One die block in particular was just as bad a piece of steel as could be found in the market; not the right carbon, in the first place; the highest possible quantity of phosphorus and sulphur in it, and, on top of all that, high manganese, which always tends to produce cracks during hardening operations.

The regular producer of die blocks would not have dared any such behavior; it would have cost him too much in reputation.

It may be claimed by some that the drop forger was a fool to try to get open hearth die blocks, but this is not so, inasmuch as they are just as successful as any other die blocks when of the proper quality and put to the proper uses.

March of Improvement.

It is doubtful whether any year in the history of the industry can equal the present one in the general advance in construction that has taken place. With the New York show a month away, enough has been disclosed regarding the 1905 cars to warrant the assertion that, with scarcely an exception, they are better vehicles than their predecessors. They will be found more efficient, more reliable, more nearly in accord with the best constructional theories—both here and abroad—than they ever were.

It may be said that there are such changes and improvements made every year, and that some cars are being presented without material change from this year. Both contentions are supported by facts; but that does not alter the original contention. Nor is the reason for this step forward difficult to find.

One year ago the number of entirely new cars was very large. The industry was in a transition stage, and the influence of foreign construction and design was very great. This year there are almost or quite as many new cars, and the European influence is equally strong. But there is this difference: The foreign designs were being tried almost for the first time; now experience has revealed both the merits of these designs and the desirability—sometimes the necessity—of changes. It is no longer necessary to slavishly copy. We can originate, graft improvements on the imported stock, with marked benefit to the cars that must be used on American roads. This we have done, and the result will be apparent at the forthcoming shows.

Along with this improvement in the new models has come a very general, even if moderate, reduction in price per horsepower. It is true that there are many increases in price, but in all cases they are accompanied by more than proportionate increases in power, to say nothing of efficiency and reliability. There is scarcely a maker who has remained stationary. His aim has been to give better value than last year; and it makes little difference whether he has done this by delivering more power for the same price or reduced his price and increased his power, or increased both. The purchaser gets more in ratio to the price paid than he did a year ago, and if he is discerning he will perceive the fact before many months have passed.

"Spellbinders of the Bench."

It is to be said that Magistrate Crane's remarks before the Automobile Club of America on Tuesday night were distinctly disappointing. As one whose scolding and speechmaking proclivities when an automobilist is before him as a prisoner merit for him the title "spellbinder of the bench," there existed the hope that some new thought or a pearl of real price might fall from his lips. Shorn of his judicial robes, however, his address was without color, and suggested that the particular newspapers which he peruses daily are of the "yellow" variety. When he urged respect of the law he urged what is already generally respected by those who heard him, usually to the best of their ability. When he stated that it is the poor man who makes the laws, he gave utterance to mere cant. When he suggested, in response to ex-President Scarritt's well timed retort, that automobilists do the paid policemen's duty and bring before him those horsemen who offend the speed laws, he merely begged the question.

There was no advocacy of an honest law, such as will be easy of obedience; there was no criticism of the police for their one-sided enforcement of the law as it exists; there was nothing, absolutely nothing, broad-spirited or enlightening in all that the magistrate said. He had recourse to two flagrant and isolated offences committed by automobilists, and, like a "yellow" editor, he singled them out and harped on them with emphasis. He seemed to have no idea that all the automobilist asks or desires is a square deal—an equal and exact dispensation of justice, and not arrest and $50 fines for motorists who violate the law while men driving horses are permitted to violate the law with impunity or to escape with $5 fines—not scotchings from the bench while horsemen are dismissed with a smile or without a word; not the employment of flagrant and isolated instances as pegs on which to hang condemnations of all automobilists, while as was recently the case in New York two children were killed and three maimed within one week by horse drawn vehicles. What the automobilist desires is, if not justice tempered with mercy, then justice not influenced by the headlines of sensational newspapers or false fears generated by newspaper utterances. Real justice is not influenced by the hue and cry of even Mr. Crane's "poor men who make the laws." Real justice is not measured by the instrument with which an offense is committed. The use of an axe to crack a skull is just as bad as the use of a blackjack. The fracture of a speed law with a horse is as bad as its violation with a motor, even if Cranes won't see it.

The Automobile Club of America performed a service in disclosing Leroy Crane the man. It permitted a truer measure of the magisterial kind.

The snowstorm of this week has filled the roads and parks and avenues with the sounds of jingling bells and the crunching of the snow beneath the hoofs of fast flying horses. It is an inspiring sight. The New York daily papers, for instance, give generous space to the scene. They give the records of the blooded animals driven to racing cutters by well known men, and tell of the brushes and the "merry pace" at which they move. All of the horses are good for better than twenty miles an hour, most of them for twenty-five, and they are being driven to the limit. Even a Vanderbilt is included in the speeding throng. But, though the speed law is being violated, the police look idly on, the newspapers make no mention of it, "the poor man" is silent, and not a magistrate has had an opportunity to make a speech from the bench. No motorist begrudges the sleighers their pleasure, but just suppose a Vanderbilt in an automobile, or any number of other men in automobiles, "cut loose" on the same thoroughfares! And yet they say that the law bears on all alike, regardless of race, color, creed or manner of vehicle used!

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FERRY TEST CASE HEARD

Court Listens to the Lawyers and Experts—Question of Freight is Raised.

Though he is himself a motorist and would be one of those who would frequently be bothered by the interpretation which he seeks to have placed on the "ferry law,' Assistant United States District Attorney Baldwin argued as the veriest motor-phobe might have done when the libel against the ferryboat Texas was before Judge Adams, in the United States District Court on Wednesday. The libel of the United States Government against the Brooklyn Ferry Company, owners of the Texas, and the answer thereto by the company's attorney, Herbert Green, have both been published in the Motor World, the libel being filed on November 7 and the answer on November 19.

The libel charged the ferry company with violating the United States statute, which prohibits the carrying of gasolene as freight on a passenger ferry, and provides that all fire, if any, in an automobile, must be extinguished before the machine enters a ferry which carries passengers. The libel asked that the regular fine of $500 for such violations be assessed against the ferry company. The answer denied that gasolene had been carried as freight, and that there was any fire in the machine, in the meaning of the law. At the hearing yesterday Mr. Green was aided by W. W. Niles, counsel to the Automobile Club of America, and he had Dr. Schuyler Skaats Wheeler present as an expert in gasolene construction. Dr. Wheeler is chairman of the Technical Committee of the Automobile Club of America, but was not called on to testify. The experts for the government were Dr. Frederick Hutton, of Columbia University, and Professor Dwight S. Jacobus, of Stevens Institute, at Hoboken.

Professor Jacobus said that if it were possible to see the interior of the explosion chamber of a gasolene automobile at the time the explosion takes place, a flame could be seen. He said further that he has examined an explosion, and that there was such a flame at the instant the explosion occurred. He also said there could be fire without any flame. Dr. Hutton, who is said to be a convert to the steam car, agreed to what Professor Jacobus said, and appeared anxious that no case be made for the gasolene car if the prohibition were to be extended to steamers only.

Mr. Baldwin said he realized the hardship which the strict enforcement of the statute would entail. He said he could better appreciate this, as he was the owner of a car himself and had been forced to have his machine pushed on and off ferry boats by hand. He told Judge Adams that the car which caused the libel to be made against the Texas was numbered 11,119, and that it was a water-cooled machine. He said the fact that it was necessary to cool the cylinders of the machine by the circulation of water proved that there was fire in it when the engine was running. He said that in a perfect car he did not believe there is any possible danger to any inflammable body that might be near the machine.

He told the Judge that he believed Congress had provided against anyone running an imperfect machine aboard a passenger ferry and keeping its engine going while the boat was making a regular trip. Mr. Baldwin also explained that on most automobiles the muffler pipe runs parallel with the frame of the machine and its outlet is near the gasolene tank of the machine, so that a fire was possible if the tank leaked. Mr. Baldwin also claimed that all automobiles that were transported on passenger ferries were carried in violation of that part of the statute which prohibits carrying gasolene as freight.

Mr. Green said that the car in question had been run onto the boat by its own power, and as soon as it was in the place on the boat appointed for it by the deck hands, the electric current had been turned off and the engine had stopped running. He said further that the engine had not been started up again until after the Texas was fast to its slip at the end of that particular trip across the East River. Mr. Green told Judge Adams that he believed Mr. Baldwin's contention that the gasolene in the tank of the car was carried as freight was erroneous. He said that if this were true, any boy who crossed the river on a passenger ferry with a partly filled kerosene lamp on his bicycle would render the ferry company liable to a fine of $500 for each such case. If a man were taking home with him a small bottle of gasolene to take stains out of his clothes, he also would make the company liable to pay a fine of $500 for each violation. As the statute also includes "loose cotton" in the list of interdicted articles, a lady who had been shopping and had with her a roll of cotton batting, would also render the company liable to the $500 fine if the statute were interpreted as Mr. Baldwin seemed to think it should be. He also said that the machine was not carried as freight, in any meaning of the term.

Mr. Niles said that Congress had passed the original statute and made the amendments thereto, with the sole idea of protecting to as great an extent as possible the lives of the passengers who used the ferry. He thought the aim had been to safeguard the passengers as much as possible while the ferry was on the river making its trip between its terminals. He called the attention of Judge Adams to the fact that the machine had been run onto the boat under its own power, but that the power was shut off and the engine stopped as soon as the car was on the ferry. Nor had the engine been started again until the passengers had begun to leave the ferry at the end of its trip, when there was no longer any danger of fire.

The attorneys for each side will hand in their briefs to Judge Adams within two weeks, and after he has studied them over he will make his decision in the case.

THREE ENTRIES IN HAND.

Eleventh Hour Swells American Representation in Bennett Cup Race—Dam May Enter Also.

Eleventh hour entries received by the Automobile Club of America for places on the American team for the James Gordon Bennett Cup race, to be run in France next summer, seemingly assure an adequate representation of this country in the historic contest. At this writing—Thursday morning—three bona fide entries have been posted with the Automobile Club of America, each of them accompanied by the required check for $600. The lists do not formally close until December 15 at midnight, and any entry mailed up to that time will, if in proper form, be accepted by the club. A fourth entry is talked of, but little is known about it, and it is not regarded seriously.

The entries now in hand, in the order of their receipt, are as follows: A 90 H. P. Pope-Toledo, entered by Colonel Albert A. Pope; a similar car, entered by W. T. Muir, of Lexington, Ky., a member of the Chicago Automobile Club, whose name has been proposed for membership in the A. C. A.; and a 90 H. P. Locomobile, entered by Dr. H. E. Thomas, of Chicago, and whose name is also before the A. C. A. as a proposed member. Of these entries, the first was received last week, the second came to hand on Tuesday and the third was received by the club on Wednesday morning.

With these entries, and any others that may be received with to-day's postmark, the A. C. A. will, within a week or two, make formal entry of an American team. This entry, together with a certified check for $600, must be in the hands of the secretary of the Automobile Club of France by January 1.

The only other entry in sight is that of Andrew Dam, a Westerner, who appeared at the A. C. A. rooms yesterday and made inquiries regarding the formalities necessary in making an entry. Secretary Butler gave him the necessary information, and he left saying he would seek a friend who was a member of the club and have him enter a car made by the Corless Engine Company, of Wisconsin, and called the Treene. It will, Dam said, develop 110 H. P.

Big Track Project in Newport.

Those bored members of the "400" who gather annually at Newport may be provided with an amusement that may arouse even their jaded interest, if reports from "Fashion's Summer Capital" are to be believed. It is said that an immense amusement park is to be installed there, the feature of which will be a two-mile track, on which automobile races will be held. The park is to be located at the north end of the city, and will be under the direction of the Newport Amusement Co. Reginald Vanderbilt is said to be one of those interested in the proposed track.

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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

Dealers can secure this splendid line
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correspondence to this end is solicited.

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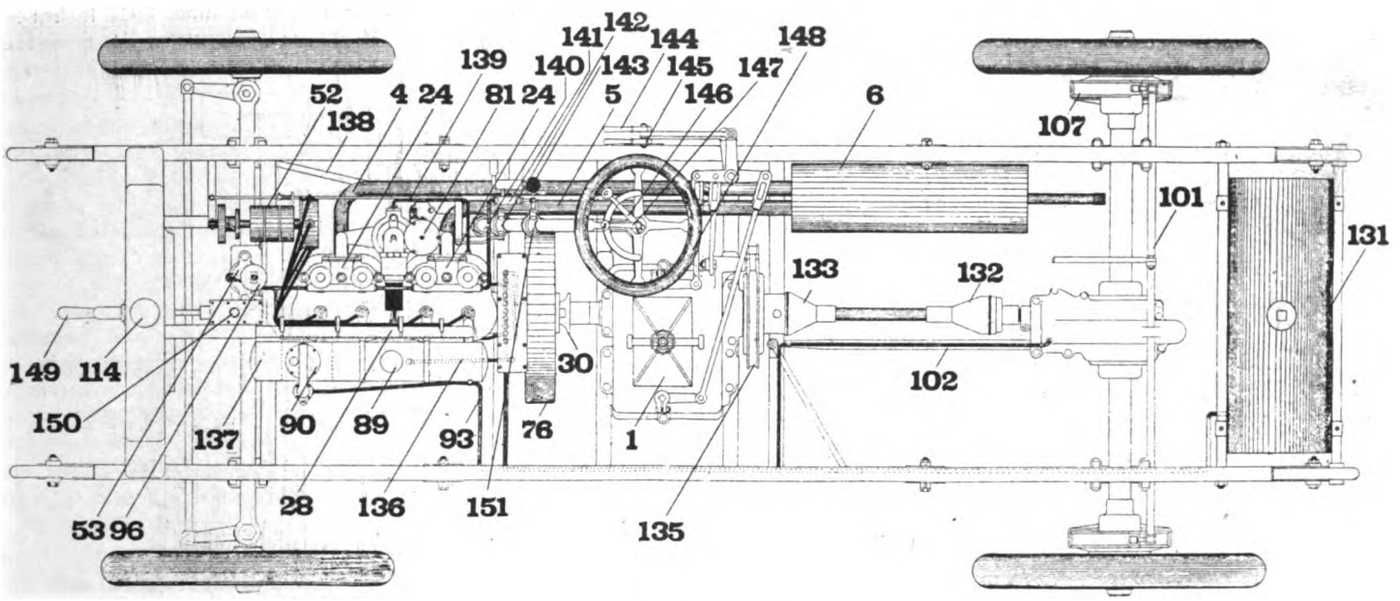
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INTERNALS OF THE WINTON

The Many Ingenious Features Embodied in the New Car—Accessibility a Characteristic.

Not without reason do the Winton Motor Carriage Co. plume themselves on having made a "ten strike" when they designed their 1905 line. The cars offer a wide range of choice, the variation being from $1,800 for the 16 horsepower, Model C, to $4,500 for the 40 horsepower Special, with the Model B at $2,500 (24 horsepower), and the Model A at $3,500 (40 horsepower). The details of construction amply bear out the claims put forth in behalf of the cars. They have been designed with extreme care, every detail having seemingly received especial attention, in the effort to produce cars that in actual service will give the maximum of efficiency with the minimum of trouble. Accessibility of parts—and especially of the motor parts—has been aimed at and attained in a remarkable degree; simplicity of control, reliability of such essential parts as the ignition, lubricating and cooling systems, and a method of carburation designed to produce a constantly reliable mixture—these are some of the features of the car which merit more than common attention, as will be seen from the accompanying description.



WINTON CHASSIS.

Another feature worthy of remark is the system of numbering the various parts, so that in ordering there will be no confusion or mistakes. The cuts accompanying the text will be found extremely useful.

The side members of the frame are pressed from sheet steel in one piece, channel section, the depth of these members varying from 1¾ inches to 5 inches. No sub-frame is employed, the motor and transmission being carried on malleable drop frames. At the forward end of the frame the radiator casting serves as a frame spreader, and also as a bearing for the starting crank. Two cross tubes join the rear ends of the side members, being attached between the two spring hangers; these tubes also support the gasolene tank. Semi-elliptical springs are supported on horns on either end of the frame.

The springs themselves are of a special patented design, used exclusively on Winton cars. The springs are so constructed that they compensate for the varying loads carried. A double spring of six leaves is so shackled that only three leaves are engaged when the load is light, while if it is heavy all six leaves are brought into engagement.

The rear and front axles are constructed of special axle steel, and are mounted on special roller bearings. The twelve spoked artillery wheels, which vary in size from 30 inches to 34 inches on the various models, are keyed to the axles and held in position by nuts. The rear axle pinion shaft is hardened, and revolves in a bronze bushing. The axle cases are split—Model C horizontally and the other models vertically, and a single ball joint strut limits movement of the axle and absorbs the breaking and driving strain.

Accessibility is the crowning feature of the new Winton motor. As is well known, it is of the four cylinder vertical type, water cooled and mounted in front under a bonnet. The cylinders are cast in pairs, with heads, water jackets and exhaust valve chambers integral. Crank shaft, connecting rods and pistons are quickly removable, without disturbing cylinders or motor accessories. The cam shaft gears are inclosed.

The method of obtaining access to the motor is simple and ingenious. The aluminum crank case is split vertically, one side being readily detachable. On this side are two openings, through either of which inspection is easy by turning a hand screw and lifting the cover. If, after inspection, it is desired to remove the working parts of the motor, the entire side of the crank case may be detached by removing the bolts that hold it in place, thus giving ready access to them without having to get underneath the motor.

The forward end of the crank case incloses the cam gears, fan gear, pump gear and magneto idler, permitting liberal lubrication thereof and excluding dirt. The crank shaft, connecting rods and valves are drop forged, and the crank shaft and crank pin bearings are of ample length to minimize wear. All crank bushings are split, providing for adjustment in taking up wear. The inlet chamber castings are cast in pairs, and are bolted to the cylinders, having copper asbestos gasket joints. The inlet valve caps may be unscrewed by hand for inspection purposes, exposing the action of the valves in operation.

The motors exhaust through one outlet for each pair. These outlets lead downward and then longitudinally into the expansion chamber, placed beneath the tonneau. From here the exhaust passes noiselessly into the air.

The well known Winton system of transmission by individual clutches is retained with some detail changes. The gear case, which is made of aluminum and split horizontally, is located immediately beneath the front footboard. The dust and oil proof case cover can be instantly removed by simply unscrewing a hand wheel, while by removing the upper half of the case, which is bolted to the lower half, the entire transmission can be removed. Two speeds forward and a reverse are provided, the drive being direct on the high gear.

Another time tested feature that has been retained is the well known Winton air governor. This gives the widest possible range of speed, the variations being obtained either by a hand lever or a foot button, the pressure being either constant or variable. The Winton system of air governing throttles not the quality, but the quantity of the mixture, the quality remaining always uniform. The throttle is actuated automatically by air pressure, produced by a gear driven pump, which forces air against the plungers on the

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inlet valves and keeps these valves seated. Consequently the valves cannot open to supply mixture to the cylinders undess the pressure is relieved. There are two methods of relief—the hand lever, above the steering wheel and a spring button under the driver's right foot. By the use of either lever or button, air is released in a constant or variable volume, as the operator desires, so that the inlet valves may lift correspondingly. The engine then draws a proportionate supply of mixture and reaches a relative speed. The operator may relieve the pressure by minute degrees from the entirely closed point to a point where pressure is no greater than non-compressed air, so that the motor is governed with extreme flexibility.

One water jacketed, float feed, compensating carburetter supplies the mixture to all cylinders. This carburetter is placed close to the motor, and, being water jacketed, temperature variations cannot prevent its successful operation. The gasolene is pressure fed from the main tank, placed under the tonneau, to the auxiliary tank, located above the cylinders, and is thence gravity fed to the carburetter float chamber. The gasolene passes into the auxiliary tank through a strainer, thereby preventing the possibility of foreign substances working into the carburetter. A pet cock on the auxiliary tank enables the motorist always to have gasolene at hand for cleaning purposes. It is impossible for the gasolene to flow back from the auxiliary tank to the main tank.

Extending through the dash is a hand screw, by turning which the supply of gasolene may be instantly cut off from the carburetter or as readily turned on again.

An absolutely reliable system of ignition is claimed to have been obtained by using a gear driven, alternating magneto in conjunction with a single non-vibrator coil. From this coil the secondary current is returned to the magneto and distributed to the spark plugs through a mechanism integral with the magneto; the interrupting mechanism is also a part of the magneto.

Of more than ordinary interest is the method of lubrication employed. Attached to the motor and extending through the dash is a worm driven, roller feed lubricator, which lubricates by direct feed.

From the reservoir above the cylinders lubricating oil is fed by gravity to the automatic lubricator, being received in a float chamber, whereby a constant level is maintained and oil flow prevented when motor is not running. From this chamber oil passes into the main chamber of the lubricator, where a gear driven aluminum roller revolves in it. The viscosity of the oil being variable with the temperature, the thickness of the oil film on the roller would increase as the temperature decreased, resulting in an excess of oil at low temperature. To provide against this condition an adjustable metallic scraper carries off the superfluous oil, limiting the thickness of the film to the distance between the scraper and the roller. Passing this scraper, the oil film engages a second scraper, in contact with the roller, by which it is directed in equal quantities through the ten oil leads extending to all the bearings of the motor and of the rear axle.

This system of lubrication provides an oil feed in exact proportion to the motor speed; assures a uniform feed in any temperature, with light or heavy oil; has no springs or valves to get out of order and cause trouble and expense, and operates without pressure. The location of the oil reservoir and lubricator, both being directly atached to motor, assures fluidity in any temperature by reason of heat passing through bonnet.

The cylinders, carburetter and exhaust valve chambers are all water jacketed, and a constant circulation of water is secured by means of a gear driven centrifugal pump. The water is circulated through a vertical tube radiator, with fins; a fan back of the radiator and a secondary fan cast in the flywheel aid in the work of cooling. No water tank is carried. The water is admitted to the radiator at the top, and flows downward through a sieve distribution into 89 copper tubes; each of these tubes is 17 inches long, with 13-16-inch square radiating fins, spaced 3-16-inch apart. From the bottom of the radiator the water flows to the circulating pump, and is then forced upward to the water jacketed portions of the motor and into the upper water connection, which directs it back to the top of the radiator.

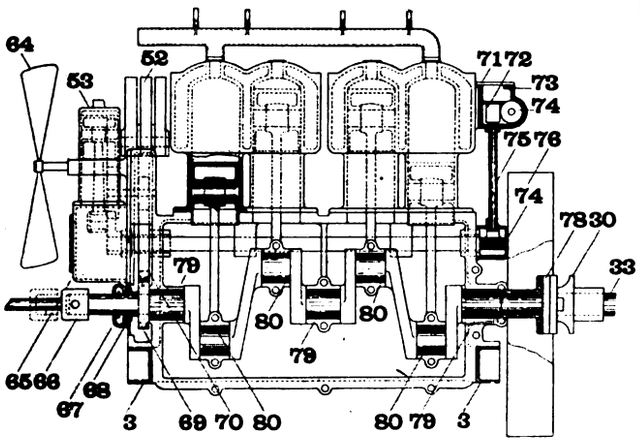
The muffler consists of a single expansion chamber of generous size, which acts so efficient that no cut-out is necessary; the exhause is claimed to be practically noiseless.

A permanently attached dustpan beneath the motor provides an effectual method of preventing the entrance of dust, mud, etc. It is a decided improvement over the leather or rubber apron frequently made use of.

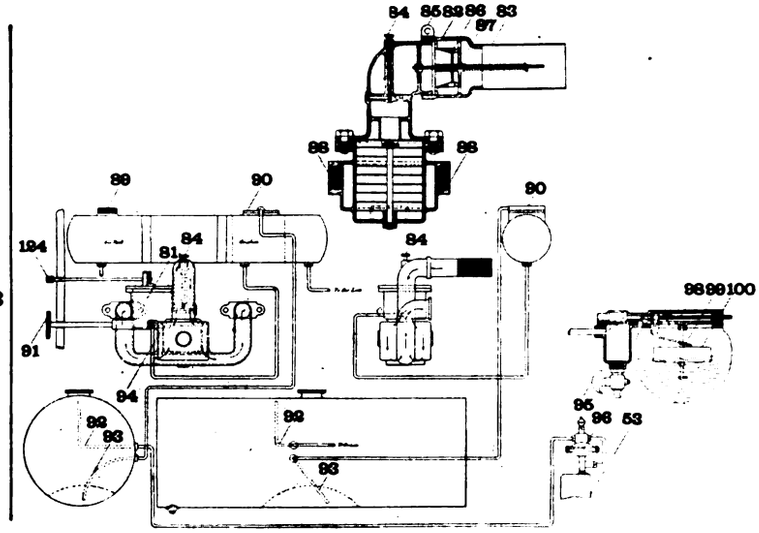
One pedal and two levers control all transmission clutches and brakes, while levers placed above the steering wheel operate the spark advance and throttle mechanism.

The gasolene reservoir holds fifteen gallons. The only other tank is one of three compartments placed above the cylinders. The forward chamber acts as a receiver for the air line, the middle chamber contains the auxiliary gasolene supply, and the rear chamber carries the lubricating oil. This tank is higher than the level of the carburetter, so that the gasolene flows therefrom by gravity to the carburerter float chamber.

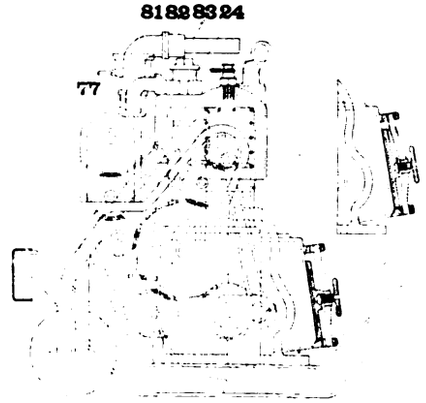
The starting crank is not detachable, but



WINTON MOTOR IN SECTION.



WINTON CARBURETTER.



Winton Motor, side elevation, show detachable portion and handhole cover.

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is shifted into engagement through a spiral slotted sleeve and out of engagement by a helical spring.

The dropped front axle is of Lemoine type forward steer.

The construction used on all external motor and transmission bearings returns back to the case all oil that works out of the bearings. Drains are placed at the bottom of the crank case and transmission case for removing the oil. They also permit of flushing.

The top water conection supports fibre bushed rings carrying the wires to the spark plugs, preventing the chance of short circuit.

Between the motor and transmission is a flexible coupling, which accommodates itself to abnormal road conditions without straining the mechanism. The universal joints are inclosed.

Three of the models—A, B and C—are supplied with side entrance tonneau bodies, seating two in front and three in rear. These are made with cast aluminum body panels and laminated wood seats. The front seat is divided. The upholstery and trimmings are made of first quality hand buffed leother, best gray drawings and 4-inch cushion springs of best temper; made up on heavy sail duck; all buttons wired in. Pockets on tonneau doors for gloves, etc. Roomy lockers underneath front and tonneau seats accommodate touring paraphernalia.

On the Model C the bodies are furnished either in silver gray or maron; it is optional on the other models.

Fire Leads to Transfer of Garage.

Negotiations were brought to a successful conclusion late last week, whereby the Standard Automobile Company, of this city, acquires a commodious garage to take the place of the one gutted by fire a week previously. It has purchased from the Central Automobile Company, 1684 Broadway, the garage business of the latter, including the good will. Thereupon the Standard Company entered into immediate possession of the extensive Broadway premises of the Central Company, taking over the entire stock of cars there on storage and continuing the contracts entered into with the owners of the cars.

The Central Company, meanwhile, will continue to have an office at the Broadway place, from which they will make sales of Mors and Napier cars. It is the intention of the concern to secure larger quarters and to open them as a fully equipped salesroom for the cars mentioned—which will continue to be the leaders—and for others which may be added to the line.

Chester Woodward, of Lawrence, Kan., had his automobile stolen some time ago, and was recently informed that it had been found in Cleveland. The thief had driven it over the roads between the two cities without any breakdowns.

CRANE OFF HIS PERCH

Magistaate Orally Hops About Betraying Child-like Timidity and Voicing One-sided Ideas.

"Gentlemen of the Automobile Club of America, I am going to tell you some plain truths to-night; pleasantly, to be sure, but none the less plainly. The burden of my text is this: that you must respect the law and obey it."

Thus impressively did City Magistrate Crane, who had been invited to address the Automobile Club of America on Tuesday night on "The Automobile and the Magistrate," begin his talk, and the nearly two-score members who had been drawn to the meeting by the announcement of Judge Crane's presence, settled themselves to hear some straight from the shoulder remarks.

Judge Crane, who was attired in conventional evening costume, was perceptibly nervous. As he stated, he was no speaker, but just a plain citizen, whose life was made miserable by speeding automobiles. And after this brave opening he plunged into a long-winded, rambling discursive talk on the sins of omission and commission of motorists; larding his denunciations with disclaimers of any personal feeling against his hosts, for whom, as merchants, lawyers, railroaders and men of affairs generally, he had the kindest feelings. He alternately scolded and flattered, besought the club to use its influence to see that every "driver of a machine" should come to respect the law and obey it. That was his Alpha and Omega—the law and how it was to be obeyed, although, with characteristic illogic, he assailed it as being complex and inadequate.

"You, gentlemen," he said, "represent everything that is good in every walk of life except automobiles. You must get the confidence of the people and thus have them respect you. You must respect them and the laws they make. The poor people make the laws of this city, and you must obey and respect them.

"I have dodged automobiles every night for months until to-night, when, thanks to the beautiful snow, they are banished from the streets." (There were three cars outside the clubhouse waiting to take their owners home.) "Three times I have been almost run over, just escaping by jumping quickly. Just think of the poor farmer who was run down and left to die on the Pelham Parkway last month, without a helping hand; do you wonder at the feeling toward automobilists? You gentlemen have offered $100 reward for the arrest and conviction of the miscreants who wrought this awful deed. But it is not enough. You are rich men, and you ought to make that reward $1,000 at least. It will all come back in respect—the respect the people will feel for you.

"Now, let's talk about the legislator. People think that the automobilists had the present law passed to suit themselves. There are four different laws, and each one of them contradicts and supersedes the others. It would take an Egyptian prince (sic) to understand the law. What you want to do is to make the law plain and strict, so that men who don't obey it shall be punished. Make the penalties heavier and enforce them. Have the punishment $50 for a first offence, $100 and ten days' imprisonment for the second and $200 and thirty days for the third. That will remove the fear of the people that their children will be run over by these machines.

"The magistrates of this city are a body of men kind and merciful to you automobilists. We want you to go out in your machines, merrily and gayly, and have a joyful time; but you must respect the law. Have on your walls in big, black letters, 'Obey the law.'

"Well, I am taking up too much of your time"——. A long pause ensued, and then ex-President Shattuck said, politely, "Not at all."

"As I was about to leave home to-night, my children asked me where I was going, and I replied, 'To speak before the Automobile Club.' 'Give it to them, papa; give it to them hard.' That shows you that even the children are against you," concluded Judge Crane.

In thanking the speaker, President Morris took occasion to say that there were 16,000 registered motorists in this State, while the A. C. A. had only 500 members, or about 3 per cent., so that the club could scarcely be held responsible for the conduct of all. He then asked if any member wished to put any questions to Judge Crane.

Ex-President Scarritt said that he was often reminded of Charles Reade's novel, "Put Yourself in His Place," when he thought of the present situation. That is what non-motorists should do. Motorists want to obey the law, but the law should be such that it is possible to obey it. But it is not. What he objected to was the unfair discrimination that was shown. "An automobilist, therefore a criminal," was the conclusion of too many of his friends on the bench. All vehicles violated the law. The A. C. A. last spring conducted tests on Riverside Drive and showed conclusively that both automobiles and horse-drawn vehicles persistently violated the speed laws. But, while plenty of motorists were arrested, whoever heard of this happening to a horseman?

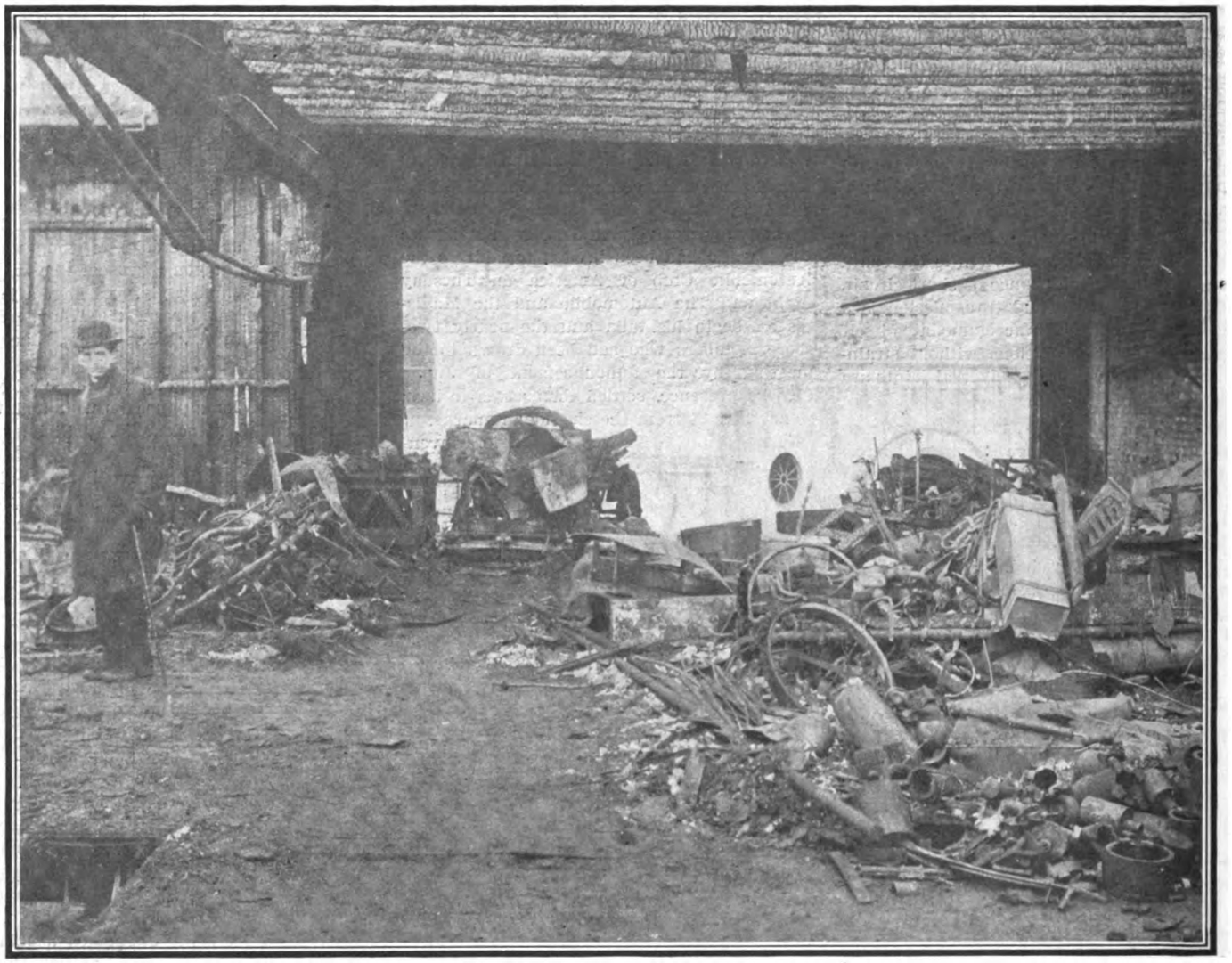
Replying to this, Judge Crane said that he did not discriminate. "Bring me a horseman who has violated the law and I will punish him," he cried. He went on to make an earnest plea against employing chauffeurs who drink. This struck a responsive chord, and all the subsequent speakers indorsed his words in the strongest manner.

Some light on legislation at Albany was shed by ex-President Shattuck, who said that at the last session, had the legislators been willing, a simple, plain law would have been agreed on. But the automobilists had to fight the legislators with their own weapons, and the present law was the result. Mr. Shattuck also spoke on the need of enforcement of the traffic rules in this city, and commended the efforts of Commissioner McAdoo to bring about an improvement in this respect.

Colgate Hoyt, F. G. Bourne and other members also spoke.

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How They Look After Going Through Fire.



THE REMAINS OF FOUR BIG TOURING CARS AFTER THE STANDARD FIRE.

Fire Department Closes a Garage.

As a result of the disastrous fire in the Standard Automobile Co.'s garage, in West Thirty-ninth street, last week, Fire Commissioner Hayes has started a rigid investigation into the gasolene storage question in New York City. Fire Marshal Peter Seery has been engaged in an attempt to determine just what caused the fire, but had made no official report up to Wednesday night. The falsity of the scarehead reports regarding explosions is shown by an inspection made after the fire by George E. Murray, superintendent of the Bureau of Combustibles. He said that the only explosions were those of two tanks of machines which were on the upper floor, where the heat was greatest. He found that the 100-gallon gasolene tank, buried two feet under the floor, was entirely unharmed. His inspection showed that the Standard company had fully complied with the laws regarding safety in such places.

In the course of Commissioner Hayes's investigations this week, he found that two hundred and fifty persons are employed on the upper floors of the building at Nos. 132 to 140 West Twenty-seventh street, where the garage of the Michelin Tire Co. is situated. As he did not think it was safe to permit the storage of gasolene in quantities in the building, he revoked the Michelin company's garage license on Tuesday last.

Helps at the Paris Show.

Following the usual custom, a number of conferences are being held during the Paris show. At these conferences papers are read by men of prominence in the automobile world, and discussions of the subjects take place. This year the papers and their authors are as follows: "The Automobile in General" and "Clutches," G. Forestier; "Electric Vehicles," "Motors in General" and "Electric Ignition," Arnoux; "Carburetters in General," L. Perisse; "Electric Transmission," Gasnier, and "Alcohol and Heavy Oil Carburetters," Lumet.

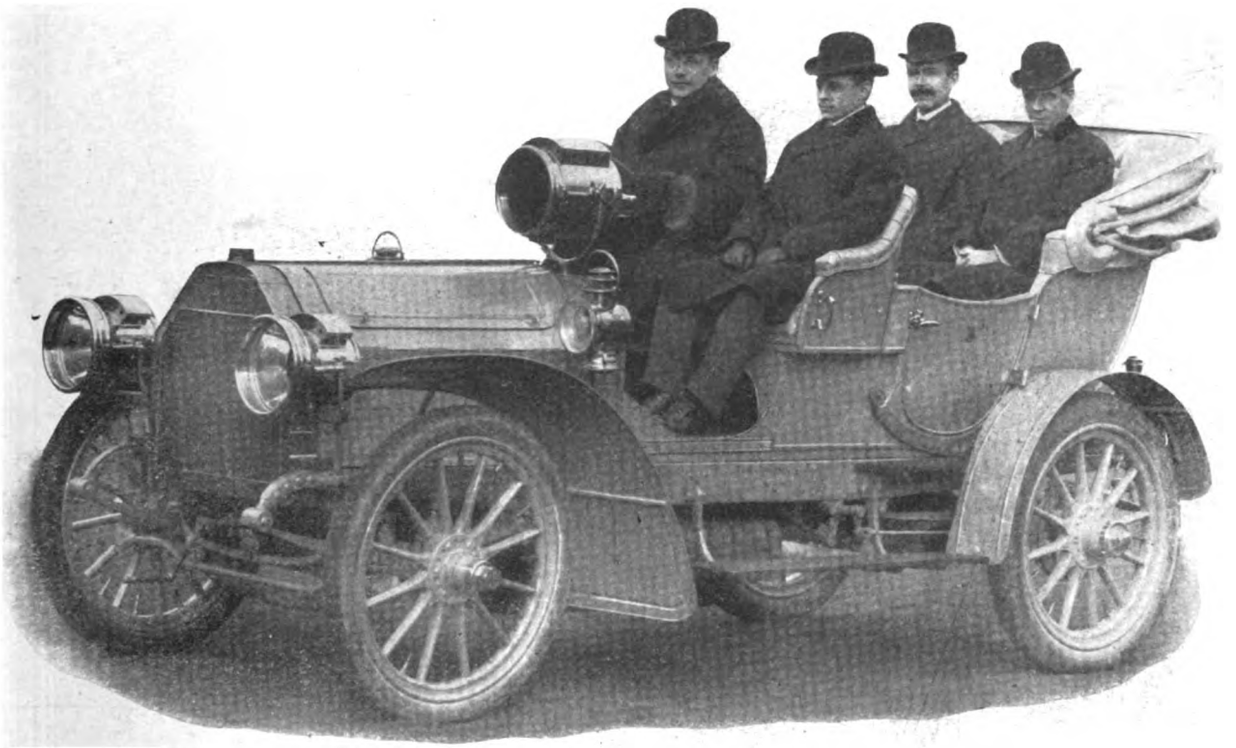
Broadening Y. M. C. A. Instruction.

Since the opening last month of the new term of the Boston Y. M. C. A.'s Automobile School, the work has been broadened and improved by the addition of a great deal of practical instruction on the floor of the garage. Small groups of students are being assigned to an instructor, and each given a thorough drill in the mechanism of the car. The mechanism is "queered" or thrown out of gear and the students are set to hunt for the trouble. A request has been received from a number of business men, brokers and others, who are unwilling to give their evenings to the school, for the establishment of a day course, and this matter is now under consideration.

It has been suggested that the shop be open on certain afternoons from 4:30 to 6, where the practical work might be studied under the same men who have charge of the night courses. A number of persons have made application for such a course, and if sufficient interest is manifested it will be undertaken with the opening of the new year.

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The Most Powerful Peerless With a Notable Load.



The first of the new 50 horsepower Peerlesses is very much in evidence out Cleveland way, and is shown by the accompanying illustration. A. E. Morrison, manager of the Peerless branch, is at the wheel, and beside him is Secretary L. H. Kittredge. E. H. Parkhurst and L. P. Moores, of the factory management, are seated in the tonneau. The car is fitted with a motor which is the exact duplicate of the one employed in Oldfield's Green Dragon, than which it is unnecessary to say more regarding its power and speed.

Oldfield Again Batters Record Table.

Fresno, Cal., had scheduled an automobile race meet for December 13, but the rain came down and converted the trotting track into a circle of mud. But as Barney Oldfield and his Peerless "Green Dragon" were the star attractions, the promoters found a way to permit them to perform. Barrels of gasolene were emptied on the track and set a-fire, drying out the surface so thoroughly that Oldfield was enabled to further "burn up" the track and establish new world's records from fifteen to fifty miles.

Oldfield himself held the former fifteen-mile time, having placed the record at 14:05 at Denver on November 5 last, but at Fresno he bettered this time by two seconds. His new record for twenty-five miles is 23:38 1-5, and his time for fifty miles 48:39 1-5. The former twenty-five-mile record was 23:59, and for fifty miles it was 55:42. Both of these records were made at Cleveland on October 19, 1904, Earl Kiser being the maker of the twenty-five-mile record, and Charles Gorndt of the other.

East Orange (N. J.) motorists have made complaint that raised sidewalks across the streets give cars and their occupants a jarring that no amount of care in driving or the fine adjustments of springs can avert. They therefore ask that a reform in this direction be made.

Two Automobiles to Replace 19 Horses.

City Electrician Ellicott, of Chicago, is making experiments to determine if automobiles cannot be employed in his department to better advantage than horses and wagons. Two cars will be used for two months, and careful track will be kept of the work of each of them. One will be used by a fire alarm repair crew and will carry a load of material, in addition to the workmen. The other will be used in the night electric light patrol service. Speed is the essential quality in this service, which is maintained for the purpose of keeping the electric lights of the municipal plants in working order.

"I believe that the city will save money by substituting automobiles for horses," said Mr. Ellicott. "We are keeping nineteen horses and wagons now for the work that two automobiles can do. It costs on an average from $450 to $500 a year for the maintenance of each horse and wagon. We are going to make the experiments at the worst time of the year and in districts where the streets are in the worst condition imaginable."

Without sticking his tongue in his cheek, Mr. Ellicott, who has wept tears over violation of the speed limits, says that the drivers of the two experimental machines will be required to give a written guarantee that they will not drive the machines faster than ten miles an hour.

New Club Forming in Detroit.

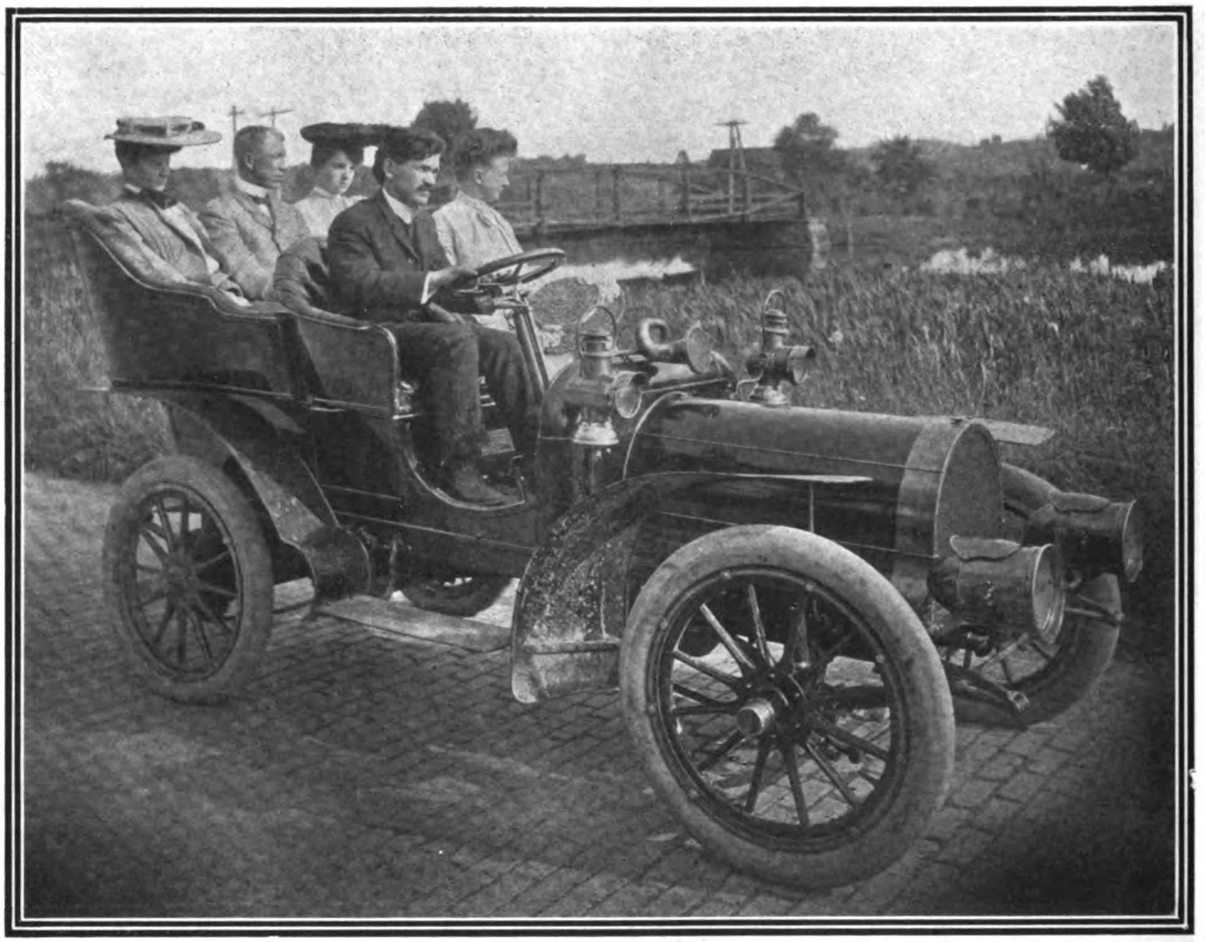
Fathered by William E. Metzger, Roy D. Chapin, "Ned" Broadwell and others of the local trade, a project is well under way to establish an automobile club in the Russell House, Detroit. Arrangements to that effect are being consummated this week with the Russell House management, who are heartily in favor of the scheme, and who have agreed to fit up in the rathskeller of the hotel suitable quarters in the form of reception, dining and smoking rooms. It is proposed to have the dues for resident members $20 per year, and for non-residents $10. The membership will be limited and by invitation only for the present. It is expected that the new club will take the place of the practically defunct Detroit Automobile Club, and with such moving spirits as those named the future of the new organization would seem to be assured.

Reward Offered for a Coward.

The Board of Governors of the Automobile Club of America, at its meeting last week, took action on the case of Jacob Clemons, the farmer whose wagon was run into by an unknown motorist on the Pelham Parkway on November 16, and who was wrapped in a blanket and left at the roadside. The governors, on behalf of the club, offered a reward of $100 for the arrest and conviction of the guilty person or persons.

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Demonstrating the Duquesne Car.



With the strong infusion of fresh capital, as detailed in last week's Motor World, the rejuvenated Duquesne Automobile Co., Jamestown, N. Y., is now "hard at it" producing cars, which will be of the type shown by the accompanying illustration, save that, instead of chains, they will employ bevel gear drive and planetary gearing. The car will be fitted with a four cylinder vertical motor, 3½x4 inches, developing 16 horsepower at 1,125 r. p. m. It will, of course, have a side entrance tonneau; indeed, the Duquesne people claim to have been the original pioneers in this form of body construction, in that they permitted entrance to the car by the tilting and swinging of the front seats. The new Duquesne will list at $1,750.

Italy's Successful War Experiments.

During September an interesting and successful trial of automobiles under the auspices of the Italian Minister of War was held, in which it has been demonstrated to the entire satisfaction of those concerned that automobiles can be used to advantage in war times. As horses owned by private persons are subject to requisition by the military authorities in the event of war, an attempt will be made to render automobiles subject to the same law.

Fifty owners of automobiles were invited to take part in the manoeuvers, and of these thirty responded. Thirteen routes were selected, leading to various points on the eastern, western and northern frontiers. All covered a considerable length, and many were difficult. One led to the fortress of the "Spluga," lying at an altitude of 2,107 meters (6,909 feet) above the sea level, and another to the "Stelvio," at a height of 2,756 meters (9,042 feet), which is the highest carriage road in Europe.

At dawn, September 1, each chauffeur of the thirty automobiles participating left the town of Brescia by a certain gate, and then opened a sealed order containing the route laid down for him. In view of the supposed invasion of the country by an enemy the routes were selected with regard to safety as well as speed. The distance had to be covered within twenty-four hours, and the military authorities made every preparation for verifying the routes, time of departure and arrival, etc. Copious notes, also, were taken in order to suggest improved methods in future trials. Some of the cars carried officers.

Every one of the cars returned to Brescia before midnight of the same day, and but one of them had an accident. Two cannon were transported by the automobiles, and bread and other supplies were taken to fictitious military camps. In rapid delivery of important supplies, such as heliographs, field telephones, etc., and for many other strategical purposes, it was found that the new service went beyond all expectations. The longest distance covered was 540 kilometers (345 miles).

Favorable to Oiled Roads.

The recent cloudbursts in the Redlands-Crafton (Cal.) district demonstrated that oiled roads will stand up under the heaviest pressure. In that vicinity there are numerous oiled roads, and, whereas the unoiled roads were badly washed and made unfit for travel, the former came out of the rush of waters as clean as a floor, and in nowise injured. One of the principal tests is Colton avenue, where the flood was so strong as to sweep away a bridge, but even the embankment left after the bridge had gone down stream was intact—the oil preventing the water from even undermining the roadbed.

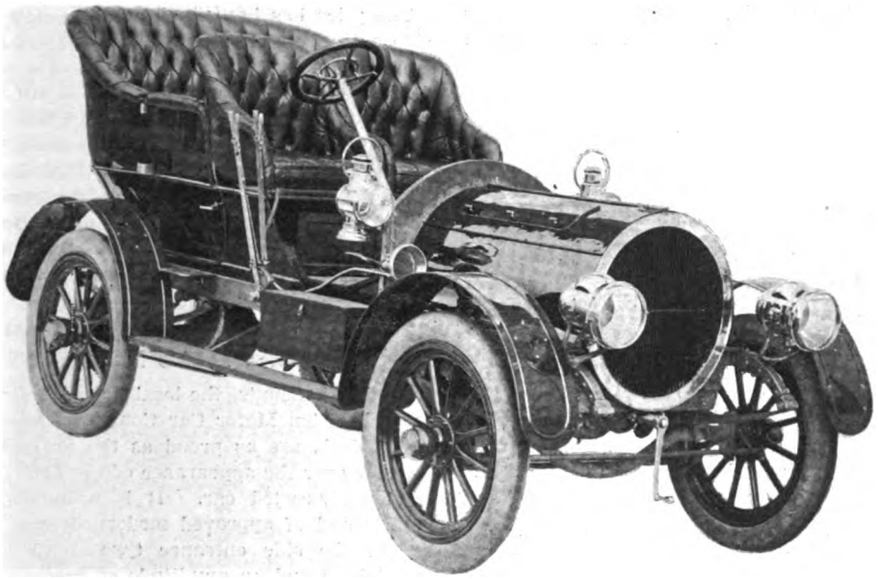
Welch Goes With Diamond.

Eugene Welch, formerly with the Boston Woven Hose & Rubber Co., has joined the Detroit staff of the Diamond Rubber Co.

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National's Striking Car.

A number of important detail changes have been made in the 1905 National gasolene car, made by the National Motor Vehicle Co., Indianapolis, Ind., an excellent reproduction of which is here given. As will be seen, the most striking feature is the adoption of a circular radiator, used in conjunction with a similarly fashioned bonnet, the two together giving the car a decidedly original and pleasing appearance, especially when viewed head on.



NATIONAL TOURING CAR FOR 1905.

The car is of the popular side entrance tonneau type, with roomy and luxurious seats both front and back. The use of a wheel base measuring 100 inches gives ample space for the fitting of the side entrance. As was the case with the 1904 National, the power plant consists of a four-cylinder vertical engine, mounted in front, but the cylinder dimensions have been increased from 3¾x4 inches to 4¼x5 inches. With this increase the engine develops a full 20 B. H. P. The engine is now set lower on the chassis, and the crank shaft, gears and propeller shaft are in line with the rear axle, insuring a marked economy in the transmission of power.

One Building for Many Stores.

Plans are being drawn for a large structure to be erected by the Perry-Payne Co., Oregon street, Cleveland, Ohio, to be used as automobile stores and garages.

The building will be one-story high and of fireproof brick, steel cement and wire glass construction. It will be 500 feet long and will extend from the south side of Power street to a new street and from Muirson street to a new street extending from Power to Oregon, between Muirson and Erie streets. The structure will thus have streets on all sides and can, in this manner, be furnished with plenty of exits leading to paved thoroughfares.

The building will be arranged for the accommodation of all manner of enterprises devoted to the manufacture, sale or handling in any capacity of automobiles. The structure will be arranged in ten sections of fifty feet each, but the dividing partitions will not be placed until the tenants have made definite plans as to space required.

The Remodeled Mitchells.

Two entirely new models are being prepared for the 1905 market by the Mitchell Motor Car Co., Racine, Wis., both of them water cooled. One of them, the two cylinder car, is ready now, and the first of the type has been received by the New York agents, the Duerr-Ward Co. The other, which has four cylinders, will be ready just after January 1.



REMODELED MITCHELL RUNABOUT.

As the illustration makes plain, the new two cylinder car is of pleasing appearance and thoroughly modern design. It is rated at 9 horsepower, and lists at $750. As it will eventually be marketed, the car will be driven by a vertical engine having two 4x4½-inch cylinders. The frame will be of pressed steel, with a 78-inch wheel base and a 54-inch tread. The transmission is by sliding gears, giving three speeds forward and a reverse, all actuated by one lever. The control is by sparking advance and throttle, operated by levers mounted on the steering post; wheel steer, irreversible, is employed. The cylinders are water jacketed, the circulation being effected by a gear driven pump, insuring positive action of the water. A float feed carburetter of the spray type is used, and the lubrication is effected by pressure feed. Divided seats are fitted, and ample luggage capacity is provided. The weight of the car is 1,050 pounds.

The four cylinder model also has cylinder dimensions of 4x4½ inches, developing 16-18 horsepower, and the wheel base is lengthened to 88 inches and the tread widened to 56 inches. A bevel gear and shaft drive is employed in place of the ½-inch Whitney chain used on the light car. The price is $1,350 and the weight 1,400 pounds; otherwise the specifications of the two cars are identical.

Harrolds's New Home.

Freed from the hands of the painters and decorators, who have been working industriously to embellish the handsome salesroom at Broadway and Fifty-ninth street, New York, the Harrolds Motor Car Company is this week moving into these quarters. Both the Broadway and Fifty-ninth street fronts are plate glass, with striking lettering on each, "Olds and Arrow Motor Cars," with "Harrolds Motor Car Co." in smaller letters underneath. The premises consist of one large, lofty ceilinged room, with two entrances on Broadway. It will be used as a salesroom exclusively. No demonstration or other cars with filled supply tanks will find a place on the floor, the lease prohibiting the presence of gasolene in even small quantities. The floor will be devoted entirely to the display of new Olds and Pierce cars, and the entire establishment will be arranged in keeping with this plan.

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KNOX'S NEW LINE

Many Notable Changes Made, Both in Appearance and Mechanism.

In addition to the side entrance tonneau and the folding rear seat surrey exclusively described in the Motor World of December 1, the Knox 1905 line will comprise an F1 runabout, the latter conforming closely to the lines and specifications of the 1904 runabout. How the enterprising Springfield concern has wrought an immense improvement in the construction and appearance of these cars, while retaining most of the time tested Knox specialties, will be readily seen from an examination of the accompanying illustrations and description.

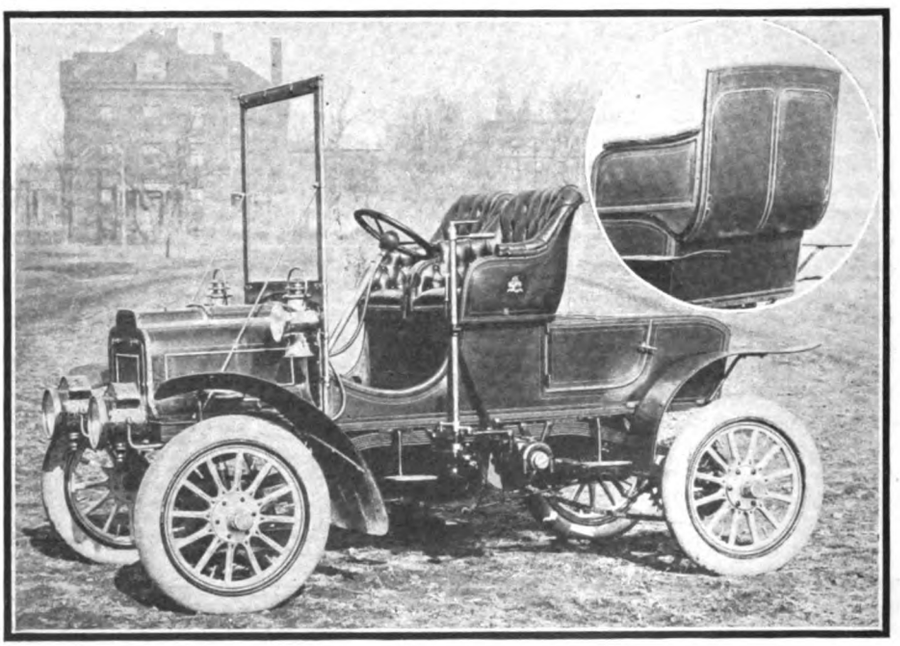


KNOX TOURING CAR.

Below are noted the important improvements in the line:

Inclosed crank case; pistons, connecting rods, transmission and all important parts may easily be removed and taken apart without disturbing the body; spiral gears inclosed; transmission exceptionally quiet, and will run all day with one oiling; automatic mechanical oiling of all principal bearings by force feed; large thrust collars for high speed clutch; improved adjustment between rocker and exhaust valve stem; a muffler connection allowing expansion and contraction without disturbing other parts; nickel steel rear axles; fans run on ball bearings; and idler is eliminated; igniter more accessible and improved in details; atomizer mounted on crank case in very accessible position; automatic auxiliary valve; aluminum dress guard around high speed clutch; clutch absolutely noiseless and smooth working; apron under motor.

The two entirely new models—the F tonneau and the F3 surrey—have been materially reduced in weight, they now scaling 2,000 and 1,950 pounds, respectively. Except in body design, wheel base, weight and price the two cars are identical. One has a side entrance tonneau, roomy and of graceful design; the other is designed to carry either two or four passengers, an ingenious folding rear seat with cushioned back and sides being provided, so constructed that it folds out of sight. The side entrance car has a 90-inch wheel base, whereas the surrey's base is but 87 inches.



KNOX SURREY, WITH FOLDING REAR SEAT.



KNOX RUNABOUT.

The well known Knox double opposed air cooled engine, centrally located and with cylinder dimensions of 5x6 inches, developing 14—16 horsepower, form the power plant. Either wheel or lever steering is fitted, and two speeds and a reverse are supplied. The wheel are 30 inches, fitted with 4-inch tires. Jump spark ignition from dry cells is employed, and a single chain drive with planetary transmission is used.

The price has been fixed at $1,900 for the side entrance and $1,750 for the surrey, this being an advance of $50 in each case over the prices at first announced. Tops are furnished at an advance of $100 to $115, and glass fronts for $50 extra. The cars will be supplied in carmine, green or blue finish.

The F1 runabout has a folding front seat, a wheel base of 81 inches, 30x4-inch wheels, and either wheel or lever steer. Otherwise the specifications are identical with the two models already described.

First Marion Reaches New York.

Homan & Schutz, the local representatives of the Marion Motor Car Company, Indianapolis, Ind., are as proud as the proverbial peacock over the appearance of the first 1905 Marion air-cooled car. It is a handsome vehicle and of approved modern design, being of the side entrance type, with long wheel base and an amplitude of room.

The engine is the familiar four-cylinder, vertical, air-cooled type used by the concern this year. It is rated at 14-16 H. P., and the car weighs 1,650 pounds, and lists at $1,500. A few detail changes have been made from last year, notable among them being axles of increased size and strength.

H. E. De Loura, formerly of Fort Dodge, Iowa, is now in San Diego, Cal., which place he considers an eminently suitable location for an automobile factory. He was formerly in the same business at Fort Dodge.

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FREEZING PREVENTIVES

The Effect of Alcohol and Glycerine—How Chemical Salts do Damage.

"In dealing with the results of my experiments with anti-freezing mixtures and recommendation of alcohol-glycerine," writes Henry Souther, "one important fact was omitted, in that I did not state that wood alcohol affected the rubber connections of the cooling system to a very slight degree. One entire season with a 33 per cent solution affected the rubber so little that after close examination with a knife and by tearing the inner lining of the hose I was not sure that there had been any change. Certainly there was nothing that had effected the hose in any great degree.

"Glycerine does soften the rubber, but any ordinary hose will stand a year in the presence of it, possibly longer. The glycerine, alcohol and water mixture affects it to a very slight degree in the proportions given in my diagrams published by the Motor World.

"The right way to handle the mixture is to find out the equation for your own car, using all the alcohol you can possibly stand and not boil the mixtures on the mild days sure to be met with in winter in this climate. Some machines will stand all alcohol—that is mixed with water—others will not, and glycerine must be used to keep up the boiling point.

"Any number of chemical solutions are advertised in the market. It is quite possible that all of them will prevent freezing; I am not able to say to the contrary. One thing must be remembered, however, and that is every salt dissolved in water forms an electrolyte through which electric currents pass with the greatest readiness. Unless the entire system of water cooling surface is of exactly the same metal one or the other of the different metals is sure to dissolve. A cooling system may last a year or two, but, sooner or later, the fatal results of electrolysis will be felt and some part of the system will disintegrate. These remarks apply to every chemical soluble in water that can possibly be used to advantage as far as lowering the freezing point is concerned. It is also a not unusual experience to discover that some of the anti-freezing chemicals have left a plaster-like deposit in the bottom of the tanks that finds its way into the pipes or tubes and actually cakes therein."

The Price of Bodies.

Referring to charges made that Paris coachmakers charge excessive prices for bodies when they are to be used with automobiles, one of the fraternity has this to say:

"Such a statement is entirely misleading. In coachwork, as in other things, there are different qualities to suit all purses. The leading coach builders only turn out one class of work—the best, and customers who go to the best coach builders know what they will have to pay.

"There is no exaggeration in their estimates for the work they produced. It is no use judging by the prices for horse drawn vehicles. Personally I would prefer to make two horse drawn carriages rather than one automobile body, for the simple reason that an automobile body had so much work upon it, in the matter of fitting, etc., which might not be apparent to the inexperienced eye, but which could easily be recognized by the expert."

How He Saves the Tires.

An adjunct of the local Winton establishment is a garage in Fifty-fourth street, just west of Broadway, where the cars are kept on "dead" storage through the winter. As giving an instance of the infinite pains taken there, a course pursued to prevent tire deterioration is interesting.

"See those jacks?" queried Manager Percy Owen, of the branch, one day this week, directing the Motor World man's attention to a workman who was walking over to the garage with a pile of the jacks referred to on each shoulder. Receiving an affirmative reply he went on:

"We put them under each car laid up for the winter. Two go under each axle, and raise the car an inch or two from the ground. Thus the tires are relieved of all weight, and kept from contact with the ground. This means a lot in the way of keeping them from injury."

The jacks referred to were simply wooden stands with four legs, the latter being cut the proper length for a Winton car. Two of them are placed under each axle, near the wheels.

The Use of White Lead.

White lead—the pure lead ground impalpably fine—has a body, covering power and a surfacing property, taken in connection with a fine, soft texture and a density of fabric, which makes it unsurpassed by any known pigment. It is probably distinguished from all other pigments by the ease with which it mixes with oil and for its free, easy working properties under the brush. While white lead must yield in point of elasticity to the red, it, at the same time, holds a place in the front rank as a highly elastic pigment—not only elastic, but wonderfully tough and sinewy in film and body, with a surface par excellence for leveling and smoothing for succeeding processes.

Stage Line in British Columbia.

An automobile seating twelve persons is to be part of the equipment of the stage line between Greenwood and Phœnix, British Columbia, next spring. J. F. Royes, who runs the stage line between Greenwood and Grand Forks, expects to put the automobile into service when the Great Northern Railroad begins running its trains into Phœnix.

TO TEST ELECTRICS

Contest Arranged for Next May—What it is Proposed to Bring Out.

So great has been the increase in the number of electric vehicles in Paris that Le Velo is organizing a reliability trial for electric vehicles, which will take place in Paris in May of next year. The competition will be directed to deciding the merits of the vehicles for town and suburban service, and will take into consideration, in addition to ascertaining this important point, the cost of upkeep per day for the distance run, the relative comfort, ease of control and silence of the vehicles, and the price. There will be three categories, or classes, as follows:

Class 1—Two seated vehicles; maximum weight 1.300 kilograms.

Class 2—Four seated vehicles; maximum weight, 1,500 kilograms.

Calss 3—Six seated vehicles, with luggage carrier, to take 30 kilograms per passenger; maximum weight, 1,800 kilograms.

All classes may have either open or closed bodies, or bodies which may be opened or closed at will, but they must all be completely upholstered as usually fitted. The weight limits are those of the vehicle in running order. Vehicles must have at least one double acting brake, and also a sprag. The entries are not limited, but no manufacturer may enter two vehicles of similar type and dimensions. Entries close on May 1, 1905.

The trials will consist of daily runs of 100 kilometres about Paris or its suburbs, returning each evening to the charging station, and will last for eight days.

About Wheels and Bodies.

"There are two important parts of the automobile that can never cheapened," remarked an Eastern travelling man the other day to a Motor World man. "I refer to the body and the wheels. On the contrary, they will cost more instead of less.

"Wood suitable for wheels and bodies—and especially the former—is becoming scarcer and costlier every day," he continued. "We now have to go South for a considerable part of the lumber we are using, as it becomes more and more difficult to get it from the northern forests, which have been our source of supply for years. So you may set it down that, whatever other parts of the automobile may cost, the bodies and wheels will increase in price."

"Unless we discover a substitute for wood," interposed another tradesman. "If we made wheels and bodies out of steel or some other metal—as a few makers do now—we should do away at one stroke with the necessity for using wood and increasing price."

Montreal now has sixty licensed automobiles, twelve of them being business vehicles.

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BLISTERS ON FINISH

Some of the Things That Cause Them and How They May be Avoided.

When the Liveryman, the Carriage Builder and the Boss Painter next resumed conversation, the Liveryman was in trouble over a newly painted and finished cabriolet, the varnish upon which had during the last summer blistered upon the back panel and one of the side panels," says the Carriage Monthly.

"This was a new job, just out of the factory," said the Liveryman, "and as it came from a firm of high standing I can't understand the cause back of the trouble."

"Why not call it a case of unseasoned wood and free the painter from any imputation which might be attached to him in connection with the matter?" chirped the Carriage Builder interrogatively, with a look full of suggestion shot straight at the Boss Painter.

To which the latter made rejoinder: "With due allowance for my friend the Carriage Builder, who invariably refuses to recognize his own chickens when they bravely return home to roost, I may as well reiterate what has often been said before—that blistering of the varnish is due principally, although not always, to unseasoned wood and to moisture sealed up in the rough stuff coats."

"But what causes this moisture to develop the blisters?" queried the Carriage Builder. "Certainly not the sun's rays in all cases, for I have observed blistering on varnished surfaces that had never been exposed to the direct heat of the sun."

"Oh, no; not always the sun's heat is the cause of the blistering," replied the Boss Painter; "but in the great majority of instances it is. Heat is the cause always, but an overheated repository has been known to develop blisters upon the surface of varnish."

"But, in my time, as a paint shop inmate," interposed the Liveryman, removing an unlighted cigar from his mouth with the air of a man who is getting much enjoyment from a dry smoke, "I was taught that blistering is never seen unless there is excessive heat."

"Which, in the main, is true," answered the Boss Painter approvingly; "but there are exceptions in all cases of phenomena. It is generally understood, and experience confirms the belief, that the blistering of a varnished surface after the varnish has had ample time to dry thoroughly is due entirely to the evaporation of moisture which lies confined under the varnish. It matters comparatively little whether the moisture comes from the wood direct or from the coats of rough stuff, heat will bring the confined moisture close up under the film of varnish, and the direct and intense heat of the sun softens the varnish to such an extent that the evaporating moisture underneath forces the garment of varnish into what we painters call puff balls. Now, a highly heated repository or carriage house may not cause a similar condition of the varnish to ensue so promptly. I have noted, however, some cases of varnish blistering due to a high and uniformly sustained room temperature."

"Such instances are not likely to occur unless a very large percentage of moisture is present in the structure of paint and varnish," added the Liveryman contemplatively.

"That would depend upon the grade of varnish, perhaps," suggested the Carriage Builder.

"A varnish that dries quick and hard would be practically proof against the heat of a repository, however high it might reach."

"In such a case, what would become of the confined moisture?" questioned the Liveryman eagerly.

"Why, the moisture would affect the varnish and circulate underneath it until around mouldings and joints it would find an exit, thereby breaking up the solidity of the surface at those points where the strain is greatest," answered the Boss Painter.

"You spoke a moment ago," said the Carriage Builder, "of moisture in the rough stuff coats causing blister. Why not some of the other coats?"

"The moisture in the rough stuff," replied the Boss Painter, picking up a ladle used for mixing rough stuff and cutting with his knife at a sharp angle into the accumulation of pigment, and then holding a microscope over the gashed portion, "is full of small pores, or tunnels—I call them pipe lines—as you will note under the glass, and during the work of rubbing the stuff with black pumice stone or brick and water these tunnels absorb and carry a surprising quantity of moisture. Unless the surface, after rubbing, is set aside to dry twelve or fourteen hours in a warm room before it is coated with the color, the moisture is likely to be very largely sealed under the color and later under the varnish."

"In a warm room, then, say heated at a temperature of 65 or 70 degrees, the moisture will quite all evaporate in the time you mention," suggested the Liveryman, questioningly.

"It will evaporate from the ordinary quick rough stuff in that time," retorted the Boss Painter, "but perhaps in case of English filler or of American filler, with which an unusual amount of white lead is mixed, an extension of time should be granted."

"But such rough stuff will not absorb moisture as freely as the quick drying kind," advised the Carriage Builder.

"Neither will moisture evaporate from it so quickly," responded the Boss Painter."

When black smoke issues from the exhaust it means that too rich a mixture is being used. The supply of gasolene entering the explosion chamber should be lessened. On the other hand, if the smoke has a blueish tinge, it is a sure sign that lubricating oil is being burned.

HERE'S THE SNOW CAR

Evolved in the Head of a Worcester Man and has "Beauties" all its Own.

A Worcester, Mass., man proudly proclaims himself the "snow conqueror," and asserts that an invention of his will "relieve the automobile from the thraldom of winter and the ice king, and make the use of the automobile in winter as common as it is in summer." All this in face of the naive admission that the lack of snow has hitherto prevented the trial of his device!

Robert Staake is the optimistic inventor, and he has filed application papers which he hopes will result in the grant of a patent to him. Pending this grant he is reticent, but to a local newspaper man unburdened himself of these details concerning the vehicle he has "invented."

The car is mounted on runners, which are such a distance from the body of the car, or from the axles, that the wheels, which are left on the car as usual, do not touch the ground. The car is driven by the revolutions of two sprocket wheels, which are armed with sharp spikes, which penetrate the earth or ice, and as they revolve force the car along on the runners. This part of the invention is not novel in itself.

What Staake considers the essence of his invention is an arrangement by which by the simple turning of a wheel or pulling of a lever the wheels may be made to come in contact with the earth or ice, and thus the car will run across spots which are barren of snow or ice.

The inventor considers that his invention will enable an automobile to be run at a high rate of speed, if desired, across the snow covered country, and that it will relieve the difficulty which would otherwise be encountered when patches where the wind has swept the snow from the roadway are met with.

One of the chief beauties of his invention, he says, is that the wheels and the runners are bi-auxiliary—that is, either may be made auxiliary to the other at a moment's notice. The motive power which drives the sprocket wheels is the same as that which drives the ordinary wheels, and the inventor claims that its transferrence from one set to the other is so simple that it is a matter of little moment.

The invention is the culmination of about three weeks of strenuous mental and mechanical endeavor on the part of Staake. Several times he thought that he had satisfactorily solved the problem, only to find a flaw which necessitated new planning and different methods.

French makers do not propose to lose the opportunity to score in the forthcoming test in India. Two of them, the De Dion and the Richard-Brasier, have already sent cars to India to compete, and Darracq, Clement-Bayard and others expect to be represented also.

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The Week's Patents.

776,542. Carburetter. Francis Paul, jr., Sorel, Canada. Filed August 7, 1903. Serial No. 168,686. (No model.)

Claim—1. In a gas impregnator, an impregnating float comprising a horizontal plate having a peripheral depending flange, one or more concentric depending partitions on the lower side of said plate, and a plurality of radial partitions dividing the spaces between the concentric partitions into a series of compartments with portions cut away, the height of some of said partitions being less than that of the others, whereby gas delivered under one of the central compartments is caused to pass successively through the others to one of the outer compartments.

776,557. Electric Transmission Mechanism. Charles G. Simonds, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Filed May 5, 1904. Serial No. 206,494. (No model.)

Claim—1. In combination, two relatively movable shafts in line with each other, and a dynamo-electric machine having its field carried at the extremity of one shaft and its armature carried at the extremity of the second shaft, said field having a web extending around said armature and forming a bearing for said second shaft.

776,561. Automobile Driving Gear. Peter Steinhauser, St. Louis, Mo. Filed March 10, 1904. Serial No. 197,577. (No model.)

Claim—1. In an automobile driving gear, front and rear axles, means for imparting rotation to the same, a coupling pole connecting the front and rear trucks, a pair of screw shafts on the vehicle, means for rotating said shafts, nuts travelling along said screw shafts, and intermediate connections between said nuts and front axle for deflecting the latter upon rotation of the shafts in either direction, substantially as set forth.

776,650. Pneumatic Tire. Charles E. Duryea, Reading, Pa. Filed January 16, 1904. Serial No. 189,297. (No model.)

Claim—1. In a pneumatic tire, a retaining shoe, having an airtight inner wall and thickened edges, in combination with a wooden felly having inclined surfaces upon which the said inclined edges bear, an iron rim shrunk thereon and a suitable clamp and oppositely disposed means engaging a common device in said felly for binding the edges of the shoe against the said iron rim and drawing said edges downward against said inclined surfaces to form an airtight joint.

776,656. Tire. Charles G. Fawkes, Denver, Col., assignor to the Fawkes Rubber Co., Denver, Col. Filed September 19, 1903. Serial No. 173,911. (No model.)

Claim—1. A cushion or pneumatic tire formed of layers of canvas and rubber and provided with external recesses formed in its inner periphery, and interior protuberances corresponding in degree and coinciding as to position with the external recesses.

776,700. Sparking Device for Internal Combustion Engines. Charles E. Sterne, San Diego, Cal., assignor to Sterne Bros. Co., San Diego, Cal., a corporation of California. Filed May 2, 1901. Serial No.. 58,530. (No model.)

Claim—1. In a sparking device, the combination with electrodes which are normally out of contact, of a rocker arm for causing a contact, the free end of which is perforated and provided with a concave seat on each side, a shouldered rod projecting through said perforation, convex clamping means, one on each side of said arm, one of them being rigid and the one between the shoulder and arm being movable, a spring between said shoulder and the movable clamping means, said spring being strong enough to return said parts to their normal position by pressure upon said clamping means, a guide for supporting the free end of the rod, and means for moving the rod longitudinally.

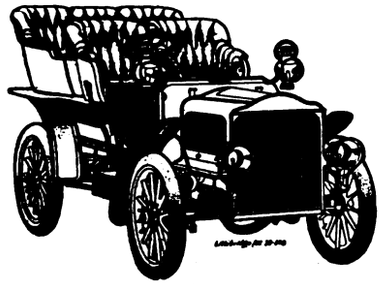
776,705. Induction Coil. Richard Varley, Providence, R. I., assignor to Varley Duplex Magnet Co., a corporation of New Jersey. Filed December 30, 1903. Serial No. 187,199. (No model.)

Claim—1. The combination with an induction coil, of a plurality of vibrators therefor and a switch for throwing any one of them into circuit at will.

2. The combination with an induction coil, of two vibrators constantly subject to the

The Incomparable WHITE

A speedy, luxurious touring car—renowned the world over for reliability. The automobile selected by a committee of the Automobile Club of America as a present for their retiring president.



Interesting descriptive matter free on request.

WHITE Sewing Machine COMPANY,
CLEVELAND, OHIO.

WHITLOCK COOLERS

For 1905.



The Leading Automobile Builders have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of cool- is worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT.

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Opposes Change in New Jersey.

That Assemblyman Scovell is not to get his proposed amendments to the New Jersey automobile law through the legislature of that State without encountering opposition is already apparent. The amendments which Scovell proposes to introduce permit the arrest of motorists without warrants, give municipalities the right to fix the rate of speed, and forbid the carrying of any numbers other than the New Jersey insignia.

Criticising the changes, the East Orange Record says editorially

"The question which the legislature of New Jersey wants to be considered, and which primarily should be considered by Assemblyman Scovel himself, is as to whether New Jersey wishes to withdraw from the position which it has taken on the subject of automobiling before the country at large.

"In the first place, what is the reason for the change? New Jersey has not suffered under the present law. Statistics show that there have been fewer accidents from violation of the law in the State of New eJrsey than in any other State where ther has been an equal amount of automobile traffic.

"Take the city of East Orange, for instance. There is no record within the limits of the city of an automobile accident which has resulted in a lawsuit or an issue in court, and yet East Orange was the first city to recognize the true interpretation of the automobile act that a violation of the speed limits was not a crime for which the automobilist could be arrested, but was a violation of a penal statute for which he could be summoned before a magistrate. This is precisely the English law of to-day.

"The understanding in the Police Department was that a man was not to be arrested unless an excess of speed prescribed by statute directly resulted in an injury to life or property. In other words, the automobilist was arrested upon precisely the same grounds as a man driving a horse or walking in the road would be arrested, viz., that by his disorderly conduct and his criminal negligence he caused injury to life or property.

"Under this correct interpretation of the law, and this proper administration of the statute, East Orange has been more than free from legitimate causes of complaint against the automobilist."

New Road to Lakewood.

The decision of the Atlantic County, N. J., Board of Freeholders to build a new road from Hammonton to the Burlington County line near Atsion, from which point there are good roads to Trenton and Lakewood, thence to Jersey City, assures a new auto route. The new course will cut two miles off the New York route, and vary the monotony of the journey for Philadelphians.

The road is one of several important highways to be built at public expense during the coming year. The county board has definitely decided to build the proposed boulevard, 100 feet wide, along the edge of the mainland from Absecon to Somers Point, at a cost of $50,000, and to expend about $25,000 more on new gravel highways from Chestnut Neck, through Galloway Township, to Cologne, on the Atlantic City Railroad, and also from English Creek, in the lower section of the county, to the golf course at Northfield. Another important connection in the highway chain will be a drive from May's Landing, the county seat, through Downstowns and Buena to the Cumberland County line, thence to Bridgeton and Vineland.

Iowa Organizes a State Club.

Starting off with a membership of more than fifty motorists, the Iowa Automobile Club was formally organized last week at Des Moines, Iowa. The following officers were elected: President, George B. Hippee; first vice-president, D. B. Fleming; second vice-president, Captain W. J. Riddell; secretary, F. L. Kern; treasurer, Charles Denham; consulting engineer, F. S. Dusenbury; executive committee, L. Aulman (chairman), E. J. Wilkins, W. P. Henry, G. B. Hippee and F. L. Kern. The principal object of the club is to further the good roads movement, and it will co-operate with other organizations to secure legislation for the improvement and maintenance of the public highways.

The club will try to have rational State laws passed providing proper rules and regulations for the use of automobiles in cities and the country, and it will do its best to protect motorists from unreasonable legislation. The club will also interest itself in organizing tours, exhibitions and contests. Local members will pay $5 initiation fee and $2 yearly dues. Outside clubs admitted to membership will pay 25 cents initiation fee for each member and a like amount for yearly dues. The Governor of the State, the Mayor of Des Moines and the members of the county Board of Supervisors and the Board of Public Works are to be honorary members of the organization. The club will be affiliated with the American Automobile Association.

Wants Lights on All Vehicles

The Worcester (Mass.) Automobile Club will try to have a law passed by the State legislature compelling all vehicles to carry lights after dark. Formal action was taken at a meeting of the club last week, when the following resolution was unanimously adopted:

"Resolved, That it will be for the welfare of every driver of any kind of a conveyance that every vehicle travelling after dark should be provided with lamps, whether milk wagons, carriages or automobiles, for the safety of every one using the highways after dark."

France Names Vanderbilt.

W. K. Vanderbilt, Jr., has been named by the Automobile Club of France as its representative on the commission in charge of the competition for the Charles J. Glidden touring trophy.

Massachusetts Club "Warms" Its House.

Although the addition to the clubhouse of the Massachusetts Automobile Club, Boston, has been in use by the members for nearly six months, it had not been properly "warmed" until last Friday evening. The addition, which is twice the size of the original clubhouse, was completed last July, when the Boston section of the St. Louis tour started, and as many of the members were out of town at that time it was decided to wait until winter for the formal dedication.

Nearly one hundred members and guests assembled in the rooms at 6 o'clock and started the housewarming with a dinner, and, remarkable to relate, "beans" were not on the menu. Elliot C. Lee, president of the Massachusetts Automobile Association, was seated at the head table, and with him were Harlan W. Whipple, of the A. A. A.; Asa P. Goddard, president of the Worcester Automobile Club, and Police Inspector Smith of New York.

President Lee led the speechmaking, and spoke of the growth of the club and praised the spirit and enthusiasm of the members which had given Boston the first automobile clubhouse in the country. President Whipple said that the Massachusetts club had set a good example, and one that the Automobile Club of America, in New York, has decided to follow in building a clubhouse and garage combined. After the speechmaking the guests were entertained by a glee, mandolin and banjo club concert and by a quartet.

The enlarged clubhouse has a frontage on Boylston street of 113 feet, and a depth of nearly 100 feet, and is three stories high. The social rooms occupy the second floor of the old part of the house, and the repair shop is on the third floor. There is an office for the superintendent and a ladies' waiting room on the ground floor, and a chauffeaus' room is on the second floor. The remainder of the three floors and the large basement is used for storing cars, those in constant use occupying the street floor and the others are stored on the floors above, as they can readily be brought down on the automobile elevator. There are accommodations for two hundred cars.

Blackinton Gets the Cup.

B. F. Blackinton has been formally declared the winner of the Knight Cup, which was the grand prize in the annual hill climbing contest of the Rhode Island Automobile Club, held at Providence on November 26. As was told in the Motor World, Blackinton's car made the fastest time in the regular events, though Harry Martin's Peerless bettered the time by one and four-fifths seconds in running off a tie with the Pope-Toledo entered by W. J. Foss. Martin entered a protest at the time, and it was considered later by the committee in charge of the contest. The committee ruled that the contest was decided before the tie was run off, and accordingly awarded the trophy to Mr. Blackinton.

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Are your eyes bothering you? Do they ache and pain you? Do they look red and feel hot? Are you troubled with headache and neuralgia? Does it hurt you to read or sew, or use the eyes steadily?

Then don't waste another hour, but get EYE-FIX, the only sure and painless cure for all eye troubles. It never fails to give instant relief, and as it contains neither cocaine, atropine, belladonna or other dangerous elements, EYE-FIX is used universally by physicians and opticians.

EYE-FIX is good to keep the eyes well and strong. And it's the one safe remedy for every eye trouble in both young and old.

If baby's eyes are weak or sore—use EYE-FIX.

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If your own eyes are bad from any cause—use EYE-FIX.

All druggists and opticians sell EYE-FIX at 50 cents. Ask for it and take no substitute. No other eye remedy in the world is like EYE-FIX, because no other remedy produces the same splendid results as EYE-FIX. A trial bottle for 10 cents will be sent you direct from our laboratory. Eye-Fix Remedy Co, Detroit, Mich. Dept. S.

magnetic attraction of the coil and a switch for determining which of the vibrators shall control the circuit of the coil.

776,708. Valve Gear for Explosive Engines. Charles H. Way, Lansing, Mich., assignor to Clarkmobile Co., Lansing, Mich. Filed December 28, 1903. Serial No. 186,866. (No model.)

Claim—1. In a gas or vapor engine, the combination of a main cylinder having suitable inlet and exhaust ports; a main piston, a suitable inlet valve, an auxiliary cylinder connected to said main cylinder by a passage or port, said passage or port being so arranged that it is connected to said main cylinder when the main piston is in its outer position, and to the outer air when said piston is in its inner position; a piston in said auxiliary cylinder, a piston rod therefor, an exhaust valve on said piston rod, of a diameter less than that of said auxiliary piston, a spring for returning said auxiliary piston to its initial position, a passage through said exhaust valve and piston rod by which said auxiliary chamber is connected to the main chamber when said exhaust valve is open, said passage being sealed by the closing of said valve, and a port for said auxiliary cylinder whereby the outer face of said auxiliary piston is subjected to atmospheric pressure, for the purpose specified.

776,982. Carburetting Apparatus for Explosive Engines. Joseph D. Anderson, St. Marys, Ohio. Filed January 4, 1904. Serial No. 187,654. (No model.)

Claim—1. In a carburetting apparatus, the combination of an engine cylinder, an exhaust pipe leading therefrom, a vaporizing chamber heated by said exhaust, an oil delivery pipe entering the vaporizing chamber through the exhaust passage, a gas outlet pipe leading from the vaporizing chamber to the engine, a reheating chamber inserted in said outlet pipe between the vaporizing chamber and the engine, said reheating chamber surrounding the exhaust pipe at a point between the vaporizer and the engine, whereby the exhaust will first heat said reheating chamber and then the vaporizing chamber.

Carriage Makers Heed the Signs.

Having put out a horse drawn vehicle with tonneau body, carriage builders are now incorporating "automobile seats" in their models. These are merely the seats with swelling sides and backs, such as mark automobile seats of the Roi des Belges type. Evidently the carriage people deem it necessary to do something to stay the side, as no less than three bodies of this sort are illustrated in a recent number of the Carriage Monthly.

"It would be pretty hard to keep posted without THE MOTOR WORLD."

That remark correctly "sizes up" the situation.

Even the MOTOR WORLD's rivals admit the truth of it.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address, Room 403, First National Bank Building, Danville, Ill

FOR SALE—1904 White Touring Car with top, gas lamps and side baskets. Car guaranteed first class shape; $1450 00. Reason for selling—buying 1905 Model "White." Address T. W. J. SUITE, 28 Manhattan Blk., Cleveland, Ohio.

WANTED—Fifteen to twenty traveling salesmen by a well-known and established tire manufacturing company, making standard goods. Only active men who know how to work effectively and all the time need apply. Exceptional opportunity for men of the right sort. Address, TIRES, P. O. Box 649, New York.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

SALESMAN.

A machine salesman, age 30, with 7 years' experience, 3 years with automobiles, desires position. Address E. N B., care MOTOR WORLD.

FOR SALE—16-H. P. four-ton Panhard Levassor Delivery Truck in perfect running order; a splendid machine at a bargain. FAIRMOUNT ENGINEERING WORKS, 2652 Callowhill St., Philadelphia, Pa.

THE ACME IMPROVED 1905 MUFFLER.



Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

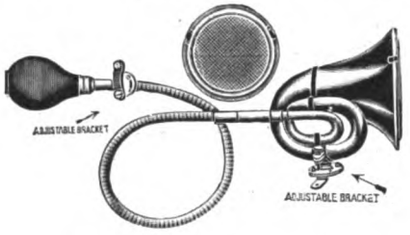
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Does not Scratch or Streak, but preserves the finish, imparting a Gloss and Lustre satisfying to the eye of the most fastidious.

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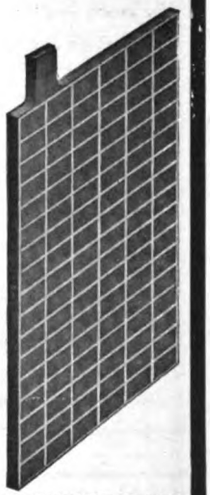
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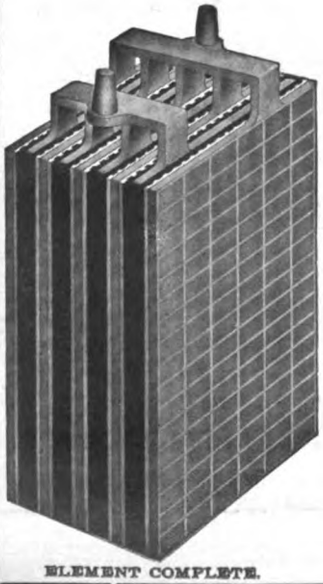
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Yours very truly, FRED JASTRAM.

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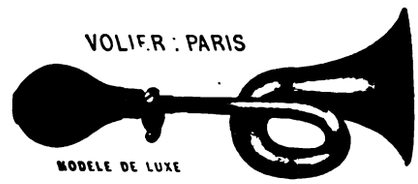
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In the 1905 line of ACME MOTOR CARS we have entirely eliminated chance.

From every stand-point, mechanical, commercial, and pleasure, we employ only such features of mechanical engineering as have been proven successful.

A line from you will bring our 1905 deal. The best that brains can make.

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Aluminum Bodies

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TOPS, FENDERS and HOODS. Painting, Repairing and Remodeling.

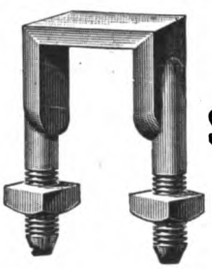
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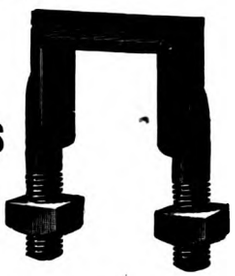
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The Best Automobile Motors

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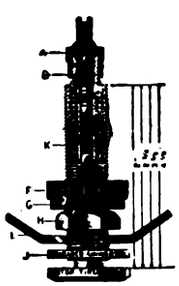
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MOTOR TIRE VALVES, as shown in cut, are made in four lengths as shown. Cut is exactly half size of the 2 in. valve.

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WHEN YOU USE
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Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

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FRENCH LICK-WEST BADEN SPRINGS

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"Have you good lamps?"



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The 1905 improved generator is a wonder, and for practical uses nothing can compare with our 1905 line of Automobile, Motor Cycle and Bicycle Lamps.

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Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

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RADIATORS,

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Write us for printed matter on the NELSON STEAM WATER PUMP, the only positive high pressure boiler feed.

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PATENTS PENDING.
Aluminum Bodies
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There are in the Southern States awaiting development thousands of acres of uncultivated farm lands in tracts of all sizes, which can be purchased very cheaply. They are productive, healthy, and close to good markets. In ten States reached by the lines of the

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For information about opportunities now available, prices of and, character of soils, etc., write to

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The Baldwin Chain Company
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Automobile Chains, Sprockets, Spur and Bevel Gears.

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Measures the Oil for the Bearings, and Always Sends it there.

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Non-Freezing Water Jacket Solution

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The Motor World

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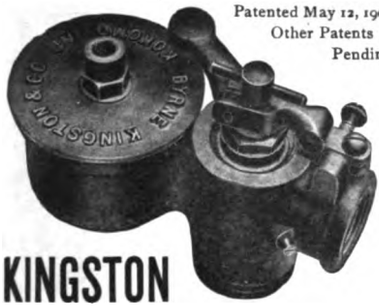
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OVER 22,000 IN USE.

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Other Patents Pending.



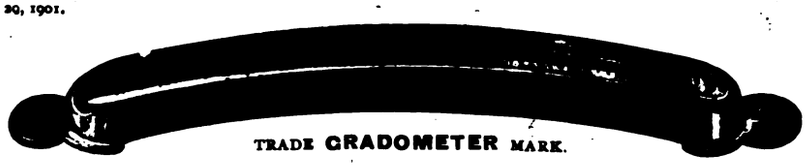
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An instrument that will enable you to determine the grade per cent. you are ascending or descending.

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"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 38 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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Send Us a Print or Sample of Some Special Parts on Which You Are Rushed and Let Us Quote Price and Delivery.

WE OFFER YOU THE SERVICE OF A MODERN PLANT MANNED BY EXPERT MACHINISTS.

THE CASE MANUFACTURING CO., Columbus, Ohio.

Send for Circular No. 8.

It you are going to build automobiles you will want this circular. It describes our Axles, Change Gears, Cone Clutches, Mufflers, Steering Gears and other standard parts. All of these parts have been designed with unusual care. They are suitable for cars of all classes.

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February 21 to March 9, 1905
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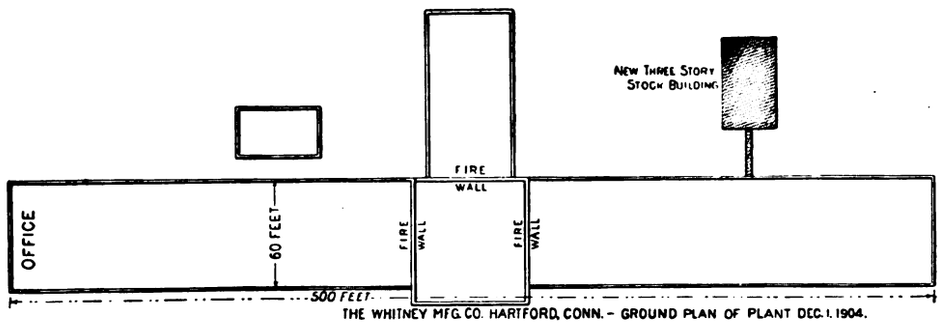
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AND STANDARDS

NOW USED ON

"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "CADILLAC" "COLUMBIA"
"CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN"
"GROUT" "GAETH" "GIBBS" "HARTFORD MOTOR STREET SWEEPER"
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"MANHATTAN" "OLDS" "POPE-HARTFORD" "PIERCE-RACINE"
"PRESCOTT" "QUEEN" "RAMBLER" "STEARNS" "SOMMER"
"SPRINGFIELD" "SNELL" "TOURIST" "WAYNE" "WORTHINGTON"
"WESTERN ELECTRIC"



THE WHITNEY MFG. CO. HARTFORD, CONN. - GROUND PLAN OF PLANT DEC. 1, 1904.

Customers should find our new Stock Building an advantage. In it we will carry our Tools, Gauges, Finished Chains, etc., and a large quantity of Chain Parts and Keys and Cutter for the Woodruff Patent System of Keying. We expect to make satisfactory deliveries even if our Manufacturing Departments should be destroyed by fire.

It is our intention to execute chain orders promptly after receiving specifications and commencing January 1st, we will endeavor to fill all orders for Keys and Cutters on the day they are received.

THE WHITNEY MFG. CO., - Hartford, Conn.

WHITNEY PAT. SEPT. 1904.

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OLDSMOBILE
Proclamation No. 2.

Mr. Buyer:

We ought to know how to build the best automobile of to-day. We have had 20 years' experience, have built more machines than any other maker in the world, and have the largest factories. The crowning triumph of up-to-date American automobile construction, the **100 per cent. plus** of Oldsmobile excellence, is our new

20 H. P. TOURING CAR.

$1400

Here is what we give you at the price:—

SPEED—6 to 40 miles per hour. Has surprising ability to climb hills on high gear.

BODY—Side entrance, heavily upholstered, hand buffed leather.

SEATING CAPACITY—Five passengers. Wheel base 90 inches.

RADIATOR—Honeycomb cooler—unsurpassed for efficiency.

MOTOR—Double opposed, 20 H. P.—cylinders 5¼ x 6 in. Simplest construction. All parts readily accessible. Valve mechanism above cylinders, away from dust and mud. Both valves mechanically operated, Noise of exhaust completely eliminated.

Do you want the discomfort, small power, breakages and trouble of the cheap tonneaus,—the complication, chauffeur and difficult adjustment of the four-cylinder cars? We think not. You want extreme comfort, a side entrance, surplus of power on hills and speed on the level, simplicity of construction, and that well-known Oldsmobile reliability.

It is yours at $1400.00, January Delivery.

Write us or our agents for further information, and place your order early.

OLDS MOTOR WORKS,

1332 Jefferson Avenue, DETROIT, MICH.

Members of Licensed Association of Automobile Manufacturers.

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GOODRICH TIRES

last through a season of hard racing and still in good condition.
Other tires on the same tracks were barely good enough for one heat.
Racing tires must be of the strongest construction. All GOODRICH tires are racing tires.



The B. F. Goodrich Co., Los Angeles, Cal. Oct.6,1904.

Akron, O.

Dear Sirs:-

I am indeed glad to place myself on record as an ardent advocate of your Goodrich Clincher Tire with which I have had four years experience in direct competition with other makes of tires and I truly believe them to be absolutely the best clincher tire on the American market today.

I used a set of Goodrich tires which had been put on my machine at San Francisco in November 1903 and which tires I used for three days hard racing at Ingleside where the car won its first race over Barney Oldfield; it was then shipped to Los Angeles and did two days hard racing here giving Oldfield a hard chase for his money on two occasions; the same car was used nearly every Saturday during the summer and then shipped to Del Monte where it raced two days fast racing winning the two open events with every mile better than 1.04; it was then shipped again to Los Angeles and I can truly say that these tires are still in good condition and ready for more fast work at the coming meet Oct.21st. These tires have never once had a pump put on them after being fitted to the rims at San Francisco last year. All other makes of tires were repeatedly replaced between races and heats at Del Monte; at least six times on one particular car where four different makes of tires were used, none of which I am glad to say were Goodrich.

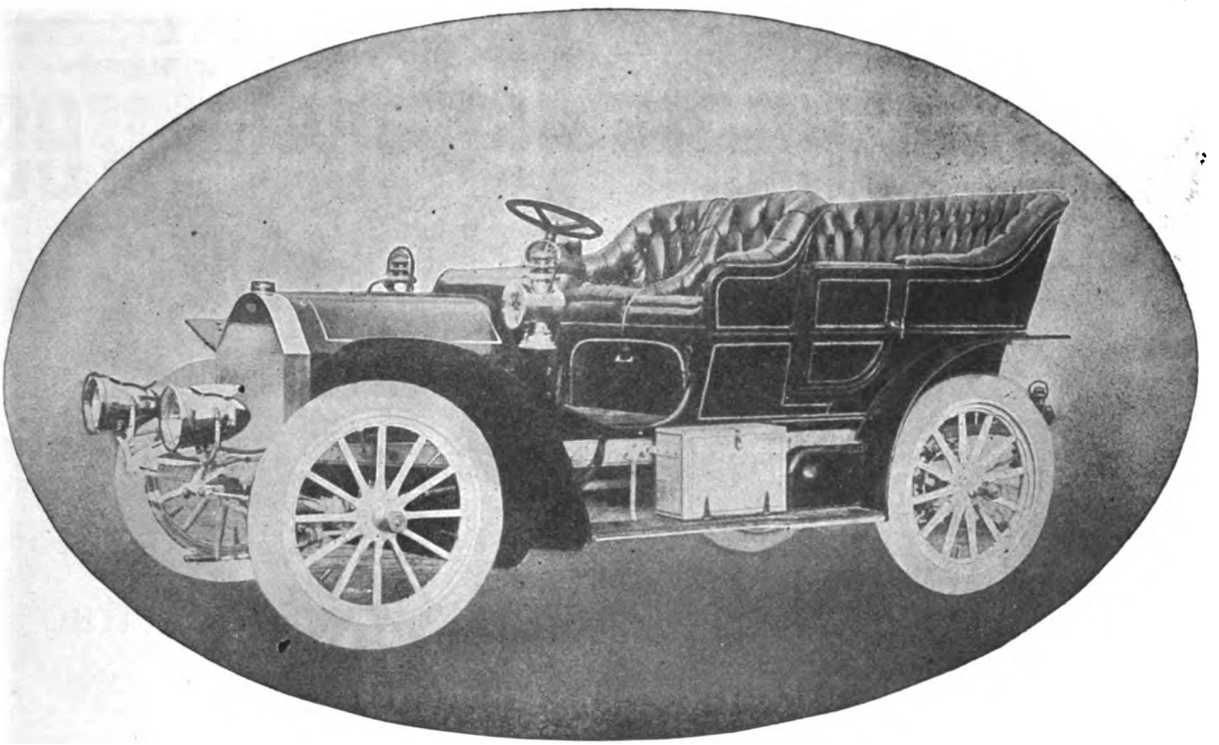
Yours very truly,

WHITE GARAGE H. D. Ryus Mngr.

THE B. F. GOODRICH COMPANY, Akron, Ohio.

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SAN FRANCISCO, 392 Mission St. BOSTON, 157 Summer St. PHILADELPHIA, 909 Arch St.
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CLEVELAND, 430 Superior St. LONDON, E. C., 7 Snow Hill.

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15-20 HP. MODEL. PRICE $2800.

Equipment includes five lamps, of best quality, full assortment of tools, accessories and spare parts—all ready for touring. All models similarly equipped. All cars have side-entrance tonneaus.

"EASILY THE BEST BUILT CAR IN AMERICA."

The *Locomobile*

OUR RECORD FOR RELIABILITY, COMPLETE FOUR-CYLINDER LINE, AND FACILITIES FOR EARLY DELIVERY WILL INTEREST EVERY AGENT.

15-20 H. P.—$2,800	20-25 H. P.—$3,700	30--35 H. P.—$5,000	40-45 H. P.—$7,500
20 h. p. motor with mechanically operated valves. Make and break ignition, magneto. Three-speed transmission. Pressed steel frame. Wheel base, 92 in. Weight, 1800 lbs. Side-entrance tonneau.	25 h. p. motor with automatic inlet valves, and jump spark ignition. Three-speed transmission. Channel steel frame. Wheel base, 96 in. Weight, 2300 lbs. Side-entrance tonneau.	35 h. p. motor with mechanically operated valves. Make and break ignition, magneto. Three-speed transmission, direct drive on top speed. Pressed steel frame. Wheel base, 106 in. Weight, 2500 lbs. Side-entrance tonneau.	45 h. p. motor with mechanically operated valves. Make and break ignition, magneto. Four-speed transmission. Pressed steel frame. Wheel base, 110 in. Weight, 2800 lbs. Side-entrance tonneau.

THE *Locomobile* COMPANY OF AMERICA, Bridgeport, Conn.

NEW YORK—Broadway, corner of 76th Street.
PHILADELPHIA—No. 249 N. Broad Street.

BRANCHES.

CHICAGO—No. 1354 Michigan Avenue.
BOSTON—No. 15 Berkeley Street.

Member Association of Licensed Automobile Manufacturers.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

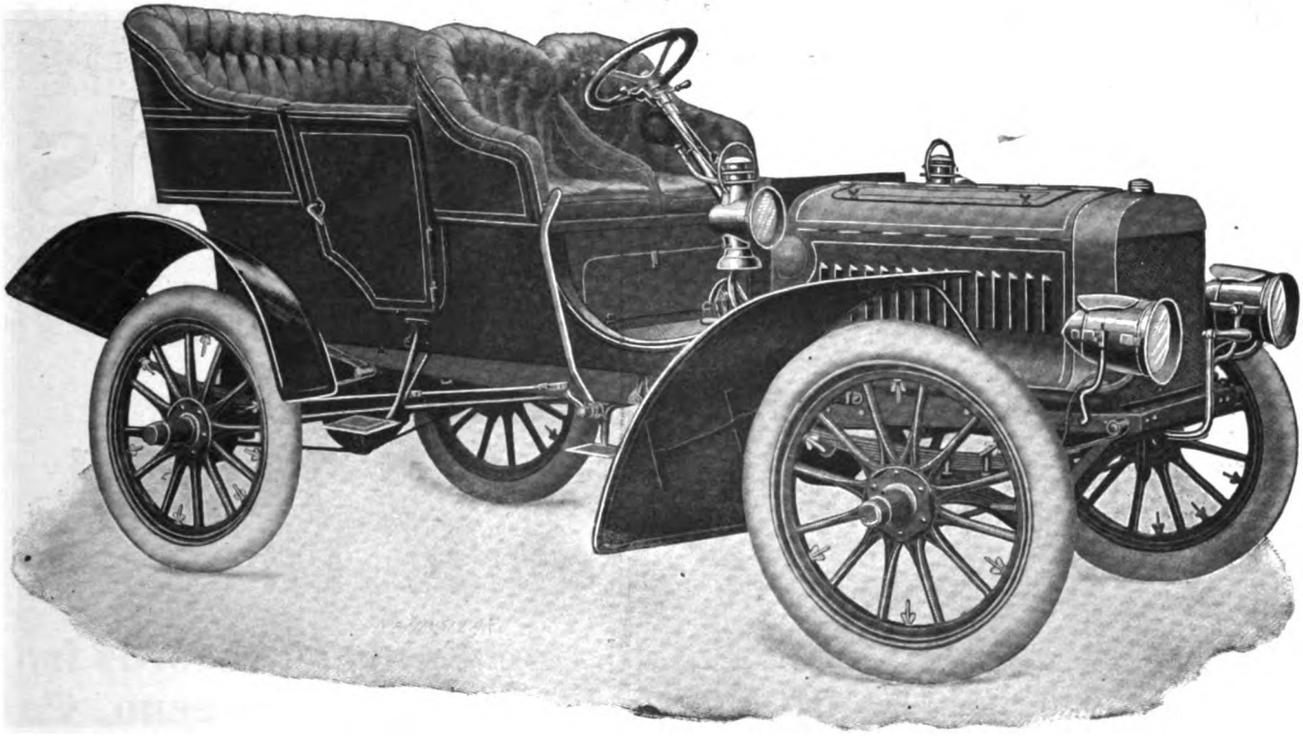
The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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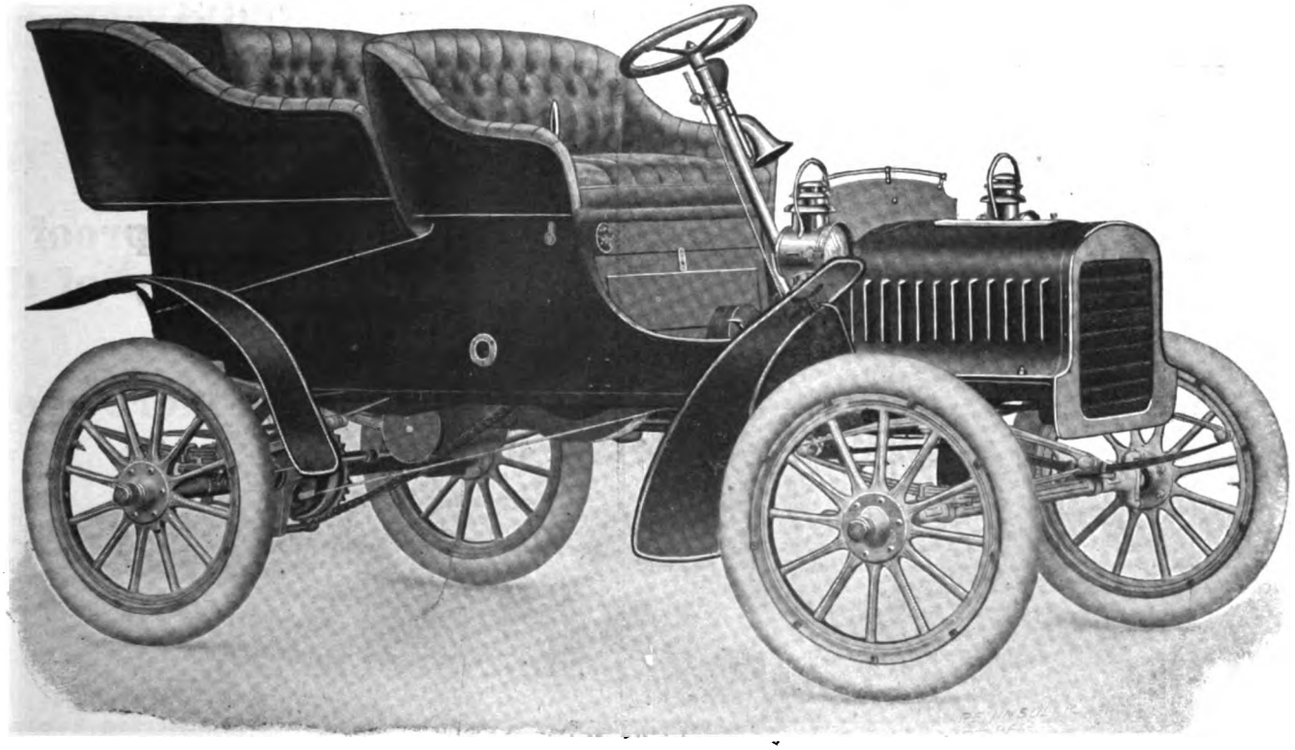
THE RECORD OF THE FORD.

Victory after victory is credited to the Ford light racing car. When you consider that this car gets its power from two of our standard type horizontal motors, you must admit it is proof positive of the correctness of the Ford design and construction for speed, strength and power. The Ford cars have established a record in every day use of consistent reliability and unvarying satisfaction.



MODEL B. Price, $2000.00. Henry Ford's Latest and Greatest Success.

A striking example of the distinctive Ford construction. Weight 1710 lbs. Four-cylinder vertical motor developing over 20-horsepower. This gives our car more power for its weight than any car of equal price in the world. Consequently there is less wear on the tires and ample reserve power for steep grades and sandy roads. Wheel base 92 inches, direct drive with universal coupling, cylinders 4x5 water cooled; automatic oiling devices with force feed, large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car places this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horsepower, planetary transmission, chain drive, and increased gasoline capacity. The most stylish low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. WRITE US TO-DAY FOR FULL INFORMATION.

THE FORD MOTOR CO., Detroit, Mich. See Exhibit, Space G, at New York Show.

JOHN WANAMAKER, Selling Agent for New York and Philadelphia

Canadian Factory, THE FORD MOTOR CO. OF CANADA, Walkerville, Ont.

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BULLETIN OF

G & J RECORDS

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.

Peerless Green Dragon,
by Barney Oldfield:
9:12 3-5.

WORLD'S TRACK RECORDS,

Peerless Green Dragon,
by Barney Oldfield:

1 mile	0:52 1-5	sec
2 miles,	1:51 1-5	"
3 miles,	2:47 ...	"
11 miles,	10:18 1-5	"
12 miles,	11:15 ...	"
13 miles,	12:12 1-5	"
14 miles,	13:09 ...	"
15 miles,	14:03	"
20 miles,	18:52	"
25 miles,	23:38 1-5	"
50 miles,	48:39 1-5	"

WORLD'S TRACK RECORDS FIVE MILES,
For LIGHT WEIGHT and MIDDLE WEIGHT CARS.

Ford Racer,
by Frank Kulick:

1st	mile, 59	sec.
2nd	" 57 2-5	"
3rd	" 56 4-5	"
4th	" 55 1-5	"
5th	" 55 1-5	"

Total, 4:43 3-5

WORLD'S 1-MILE TRACK RECORD for LIGHT and MIDDLE WEIGHT CARS.

20 H. P. Ford,
by Frank Kulick,
55 sec.

WORLD'S TRACK RECORDS SIX TO TWENTY-FIVE MILES FOR STRIPPED TOURING CARS.

Peerless Blue Streak,
by Charles Burman:

6	miles,	6:24
10	"	10:40
15	"	16:02 2-5
20	"	21:24
25	"	26:50 1-5

WORLD'S 5-MILE TRACK RECORD FOR TOURING CARS.

Pope-Toledo,
by B. F. Dingley:
5:09 3-5.

WORLD'S 1-MILE TRACK RECORD FOR TOURING CARS.

Pope-Toledo,
by George Fuller:
1:00 3-5

WORLD'S 10-MILE TRACK RECORD FOR TOURING CARS.

Peerless.
by Barney Oldfield,
10:50 1-5.

G & J

Records! Records!

The Invincible Oldfield on G & J Thread Fabric Tires

Breaks all world's track records from fifteen to fifty miles at Fresno, Cal., December 13, on the Peerless Green Dragon:

15 miles,	-	14:03
20 "	-	18:52
25 "	-	23:38 1-5
50 "	-	48:39 1-5

Every week brings added proof of the great speed and durability of the G & J Thread Fabric Tires.

We would like to tell you more about them. Write us.

G & J TIRE CO.

Factory, 549-617 East Georgia Street,
INDIANAPOLIS, IND.

Branch:
429 Wabash Avenue,
CHICAGO, ILL.

Branch:
247 Jefferson Avenue,
DETROIT, MICH.

We shall exhibit at the New York, Chicago, Boston, Cleveland and Detroit Automobile Shows.

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"Swedoh" Spring Steel Rims

all bear this trade mark:

TRADE MARK

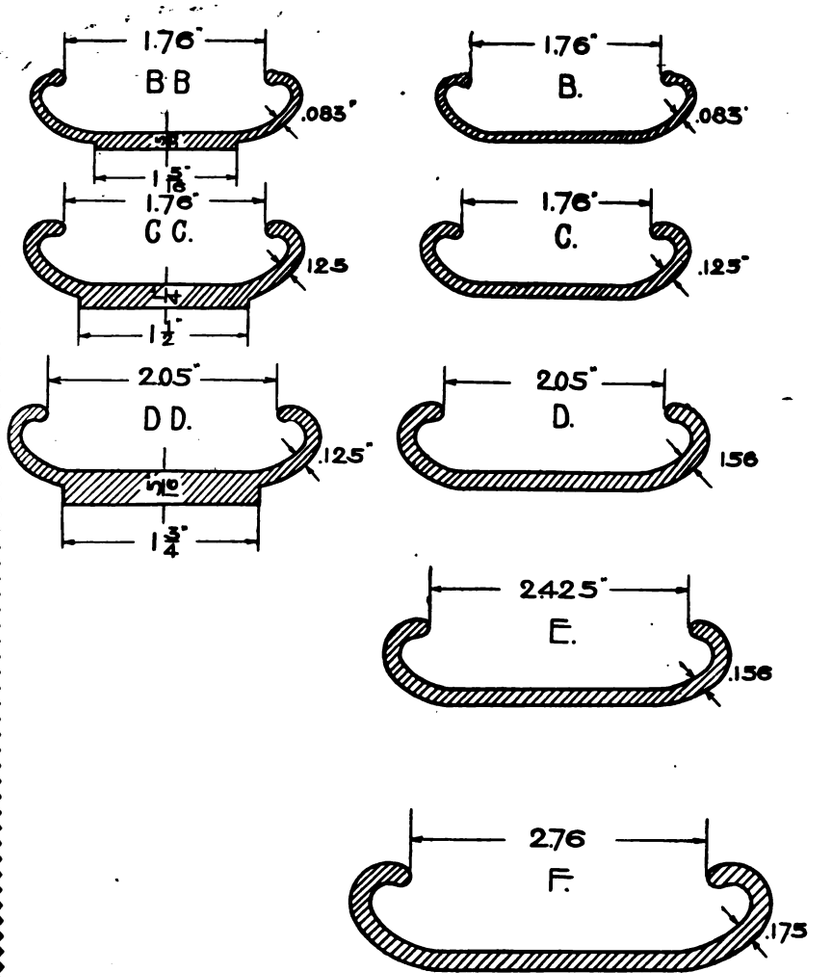
LABEL COPYRIGHTED.

The official stamp of approval of the tire makers denoting that **"Swedoh" Spring Steel Rims** fit all standard detachable tires

"TRUE AS ('Swedoh') STEEL"

has an added significance when applied to rims, meaning **A TRUE CIRCLE OF STEEL THAT STAYS TRUE.**
See that they are on all your automobiles.

Rims for Wire Wheels. **Rims for Wood Wheels.**



CLINCHER RIM MEASUREMENTS.

Size.	Rim Section.	Inside Diameter of Rims for Wood Wheels.	Diameter of Rims at Tire Seat for Both Wood and Wire Wheels.
26x2½ in.	B.	20.834 in.	21 in.
*28x2½ " interchangeable	"	21.834 "	*22 " interchangeable
*30x2½ " "	"	23.834 "	*24 " "
32x2½ "	"	26.834 "	27 "
34x2½ "	"	28.834 "	29 "
36x2½ "	"	30.834 "	31 "
26x3 "	"	19.834 "	20 "
*28x3 " interchangeable	"	21.834 "	*22 " interchangeable
*30x3 " "	"	23.834 "	*24 " "
32x3 "	"	25.834 "	26 "
34x3 "	"	27.834 "	28 "
36x3 "	"	29.834 "	30 "
26x2½ "	C.	20¾ in.	21 "
*28x2½ " interchangeable	"	21¾ "	*22 " interchangeable
*30x2½ " "	"	23¾ "	*24 " "
32x2½ "	"	26¾ "	27 "
34x2½ "	"	28¾ "	29 "
36x2½ "	"	30¾ "	31 "
26x3 "	"	19¾ "	20 "
*28x3 " interchangeable	"	21¾ "	*22 " interchangeable
*30x3 " "	"	23¾ "	*24 " "
32x3 "	"	25¾ "	26 "
34x3 "	"	27¾ "	28 "
36x3 "	"	29¾ "	30 "
28x3½ "	D.	20 11-16 in.	21 "
30x3½ "	"	22 11-16 "	23 "
32x3½ "	"	24 11-16 "	25 "
34x3½ "	"	26 11-16 "	27 "
36x3½ "	"	28 11-16 "	29 "
28x4 "	E.	19 11-16 "	20 "
30x4 "	"	21 11-16 "	22 "
32x4 "	"	23 11-16 "	24 "
34x4 "	"	25 11-16 "	26 "
36x4 "	"	27 11-16 "	28 "
28x4½ "	F.	18 21-32 "	19 "
30x4½ "	"	20 21-32 "	21 "
32x4½ "	"	22 21-32 "	23 "
34x4½ "	"	24 21-32 "	25 "
36x4½ "	"	26 21-32 "	27 "
28x120m-m & 5 in.	"	17 21-32 "	18 "
30x120 " & 5 "	"	19 21-32 "	20 "
32x120 " & 5 "	"	21 21-32 "	22 "
34x120 " & 5 "	"	23 21-32 "	24 "
36x120 " & 5 "	"	25 21-32 "	26 "
40x120 " & 5 "	"	29 21-32 "	30 "
		Circumference at Tire Seat.	
750m-mx 85m-m	D.	69 5-16 in.	
800 " x 85 "	"	76 1-32 "	
760 " x 90 "	"	70 3-16 "	
810 " x 90 "	"	76 in.	
870 " x 90 "	"	82¾ in.	
910 " x 90 "	"	88½ "	
1010 " x 90 "	"	101⅝ "	
820 " x120 "	F.	78 "	
850 " x120 "	"	74¼ "	
920 " x120 "	"	82¾ "	
1020 " x120 "	"	94 15-16 in.	

* Note that the 28x2½ and 30x2½ tires are made interchangeable with the 28x3 and 30x3 tires. m Millimetres.

We also manufacture a complete line of **COPPERIZED AUTOMOBILE OILERS**—the kind that last.

AMERICAN TUBE & STAMPING CO.,

N. Y. Office, 258 BROADWAY. **BRIDGEPORT, CONN.**

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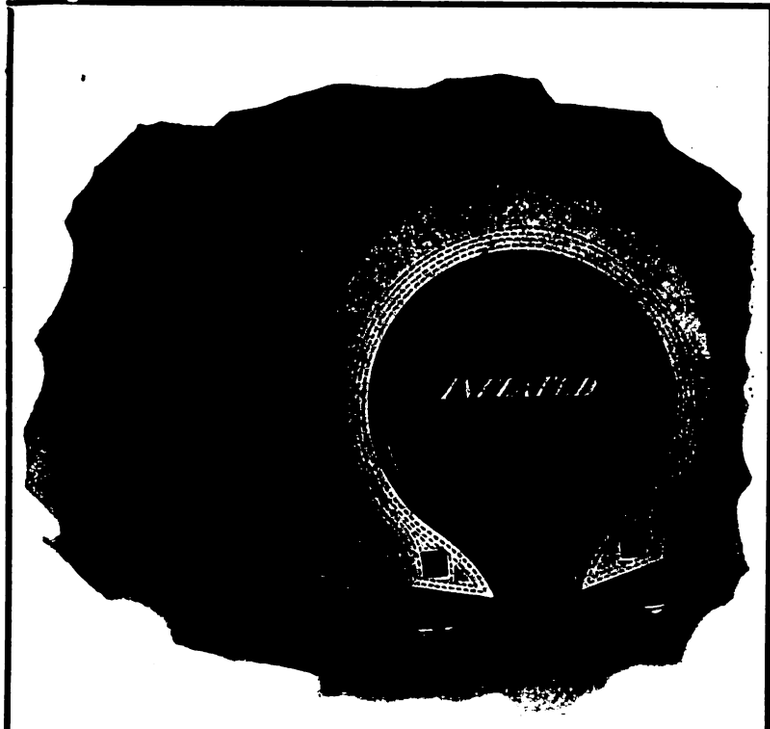
— THAT ETERNAL QUESTION —

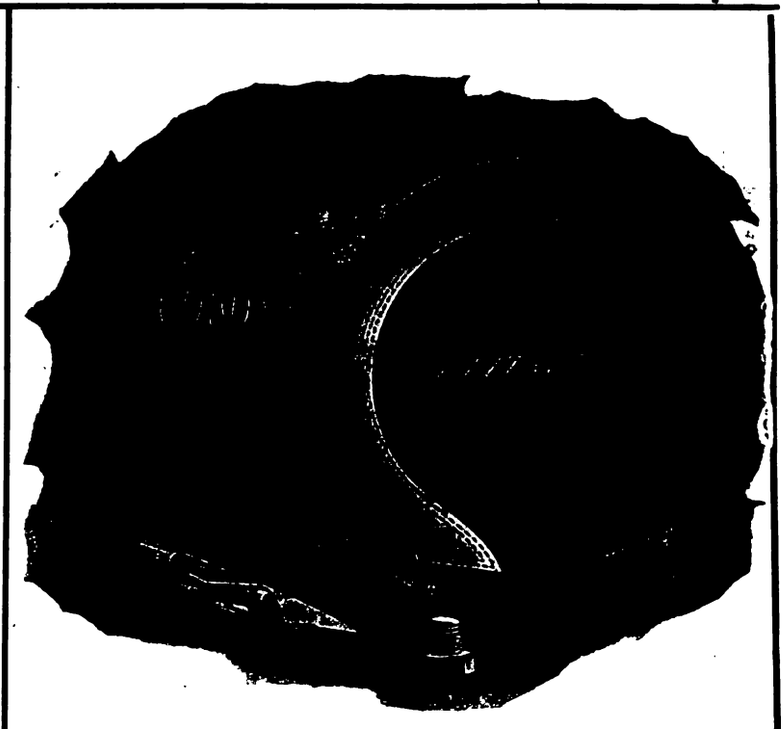
— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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DAD AND I HOPE THAT THE FELLOWS WHO DON'T OSE MORGAN & WRIGHT CLINCHER TIRES WILL HAVE A HAPPY CHRISTMAS. THOSE WHO DO USE 'EM ARE HAPPY ALREADY

THE MORGAN & WRIGHT CLINCHER

has been the BIG success in the Clincher Tire field in 1904.

Its superior strength and resiliency, and its extremely tough cover, have classed its users among the best-satisfied automobilists in the country so far as tire-equipment has been concerned.

MORGAN & WRIGHT, - - CHICAGO.

NEW YORK, DAYTON, DETROIT, ATLANTA, ST. LOUIS, SAN FRANCISCO.

MEET US AT THE NEW YORK SHOW.

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THE MICHIGAN

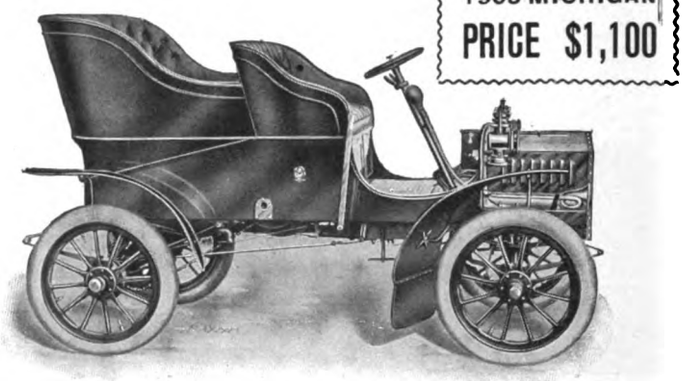
Two Models "D" and "E"

LIGHT TOURING CARS FOR 1905

Appropriately Named

"The Car of Power."

MODEL D
1905 MICHIGAN
PRICE $1,100



DESCRIPTION:—These cars have our tried and tested 1904 Motors, 4 5-8 x 5 in., 14-horsepower, 2-cylinder, horizontal, opposed. Planetary transmission with two speeds forward and reverse. 1 1-4 in. chain, Warner differential, Hill Precision Oiler, Schebler or Kingston carbureter, expanding rear hub brakes and brake on differential, full elliptic springs of best quality. French hood. Model D has 80 inch wheel base, 30 x 3 1-2 inch tires, removable tonneau, rear entrance. With 3 in. tires, $1,050. Model E has 86 in. wheel base, 30 x 3 1-2 in. tires. Side Entrance. Price, $1,250. We shall be pleased to send you catalog or answer any question.

MADE BY

Michigan Automobile Company

Kalamazoo - Michigan

New York Show, Jan. 14-21, Section C, Basement

THE ROYAL TOURIST

FOR 1905.

32-38 H. P. FOUR SPEEDS.

$3000.00—STANDARD EQUIPMENT.

DELIVERIES GUARANTEED.

Get in line and write for Advance Booklet NOW.

ROYAL MOTOR CAR COMPANY, Cleveland, Ohio.

NEW ENGLAND AUTOMOBILE CO., Boston and New England.

C. A. DUERR & CO., Inc., New York and Vicinity.

HARRY BRANSTETTER CO., Chicago and Vicinity.

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"PUT DOWN 4 AND SUBTRACT 2,"

And any teacher who knows his book and is free from prejudice cannot but tell you that the rnotor that successfully performs the subtraction and accomplishes with two strokes all that others require four to accomplish is a distinct advance in the art.

The 2-Cycle Motor used in the Elmore Car

is an advance of the sort. There is no lost motion—no useless strokes.

Our booklets will help you to "study up" on the subject.
They are free for the asking.

ELMORE MANUFACTURING CO., Clyde. Ohio.

THE ACME OF PERFECTION FOR 1905

Type 9 Runabout. Price $800

Single Cylinder. Vertical Motor, 8 H.P.
Three Speeds, Forward and Reverse.
Ball Bearing Sliding Transmission.
Bevel Gear Drive.
Governed Engine Automatic Carbureter.
Weight 1100 lbs.

Type 10 Runabout. Price $1000

Two-Cylinder Vertical Motor, 16 H.P.
Three Speeds, Forward and Reverse.
Ball Bearing Sliding Transmission.
Bevel Gear Drive.
Governed Engine Automatic Carbureter.
Speed, 45 miles per hour.
Weight, 1200 lbs.

Type 6 Light Touring Car Price $1650

Two-Cylinder Vertical Motor, 16 H.P.
Three Speeds, Forward and Reverse.
Ball Bearing Sliding Transmission.
Double Chain Drive to Solid Rear Axle.
Governed Engine Automatic Carbureter.
Detachable Tonneau. Seats 5.
Weight 1900 lbs.

Type 8 Touring Car Price $2750

Four-Cylinder Vertical Motor, 28 H.P.
Four Speeds, Forward and Reverse.
Ball Bearing Sliding Transmission.
Double Chain Drive to solid rear axle.
Governed Engine Automatic Carbureter.
Double Side Entrance Tonneau.
Magneto Ignition.
Folding Cape Cart Top.
Speed, 45 to 50 miles per hour.

A very interesting proposition, with photos and detailed description of all our cars will be mailed to agents in unoccupied territory. The Easiest Selling Line in America. Better write.

ACME MOTOR CAR COMPANY, Reading, Pa.

DEVLIN & CO.,
No. 1407 Michigan Boulevard, Chicago, Ill.
Western Distributors.

We will exhibit at
New York and Chicago
Shows.

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"The Maxwell"



16 H. P. TOURING CAR
Price, for the Present, $1550

8 H. P. TOURABOUT
Price, for the Present, $700

MAXWELL POINTS

are bound to appeal to you on account of their extreme practical value to the average American automobilist.

The small number of parts in "Maxwell" constructions and the absolute simplicity of each part places these two cars in a class by themselves. If you want an automobile that is to be depended upon—one in which there is "nothing to do but ride" and which is a stranger to the repair shop, then get posted as to the "Maxwell." It is the car for *you*.

NO PUMP. NO CHAIN. Double opposed motor in front under the hood and easily accessible in every part. Transmission case and crank shaft cast in one piece of aluminum. Noiseless, smooth and strong.

Agencies for 1905 are now being placed.

MAXWELL-BRISCOE MOTOR COMPANY, - Tarrytown, N. Y.

TRY US FOR

PRESSED STEEL FRAMES.

We are making them from the Highest Grade of Cold Rolled Steel under the most perfect conditions of manufacture.

Latest types of Hydraulic Presses and Rivetters, give us unsurpassed facilities for making pressed steel frames in large quantities. Where accuracy and quality are considered we guarantee satisfaction.

NOW IS THE TIME TO CONSIDER 1905 REQUIREMENTS.

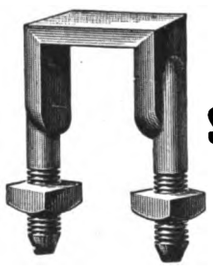
Send us your drawings and get our prices.

CLEVELAND CAR SPECIALTY CO.,

CASE AVENUE and LAKE STREET, CLEVELAND, OHIO

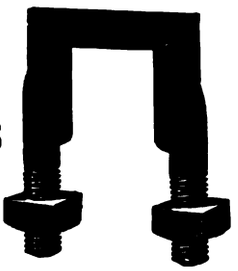
THE M. SEWARD & SON CO.

NEW HAVEN, CONN.



MANUFACTURERS OF

CARRIAGE HARDWARE
AND
Special Drop Forgings
FOR
Automobiles
AND OTHER WORK.



We are prepared to make estimates from drawings or models and guarantee first-class work.



1905 THOMAS
40-Horse Flyer
$3000.

SEND FOR CATALOGUE.

We Build Motorcycles too.

A Big, Powerful Touring Car that Laughs at Mud and Hills.

E. R. THOMAS MOTOR CO., - 1210 Niagara St., Buffalo.

Members Association of Licensed Automobile Manufacturers.

The Best Automobile Motors

AND

Automobile Charging Machines

ARE MADE BY

THE ELWELL-PARKER ELECTRIC CO.,

CLEVELAND, O.

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The Old Reliable

WATERLESS KNOX CARS

FOR 1905.

HIGHER IN QUALITY.
LOWER IN PRICE.



Superb in Style and Finish.

The Knox 1905 two-cylinder (air-cooled) machine is as quiet and as smooth working as any four-cylinder machine, with only half its complications.

14-16 H. P. Side-door Tonneau, -	**$1900**
14-16 H. P. Convertible Surrey, -	**1750**
14-16 H. P. Folding Front-seat Runabout,	**1500**
Single Cylinder Folding Front-seat Runabout,	**1250**

1905 Models will be on exhibition at the New York and Chicago Automobile Shows.

Knox Automobile Co.

SPRINGFIELD, MASS.

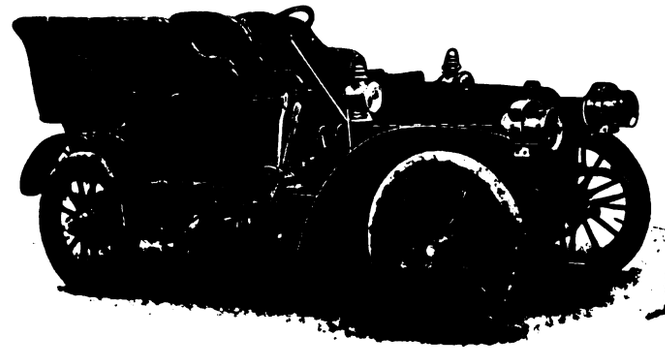
Member Association of Licensed Automobile Manufacturers.

Selling Agents in all Principal Cities.

Waterless Knox Automobiles awarded GRAND PRIZE at Louisiana Purchase Exposition.

Peerless

The Car of Achievement



Former Records Fall Before the Peerless

At Sacramento, Dec. 4th, Chas. Burman, driving a 24-H. P. stripped Peerless touring car, established the following marks:

10 miles . . .	10:40
15 miles . . .	16:02 2-5
20 miles . . .	21:24 2-5
25 miles . . .	26:50

All the intermediate distances, from six miles up were covered in times considerably less than the former records. Furthermore, the reports of every race meet tell of the establishing of new world's records by the "Green Dragon."

The Significance of "Green Dragon" Records

Is that an engine identical with the one in this record-breaking car is placed in each 1905 model 50-H. P. Peerless car. An engine built on similar lines is in each of our new 24-H. P. and 35-H. P. cars.

Write for Information About the 1905 Models

Peerless Motor Car Co.

CLEVELAND, OHIO.

Members Association Licensed Automobile Manufacturers

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Motorists and others WHO KNOW
select

The Incomparable WHITE

Those WHO DON'T KNOW,
and are oftimes influenced by the widely advertised achievements of specially built racing cars, would do well to look into the WHITE record for racing and reliability with stock cars.

The WHITE is a Touring Car that Tours.

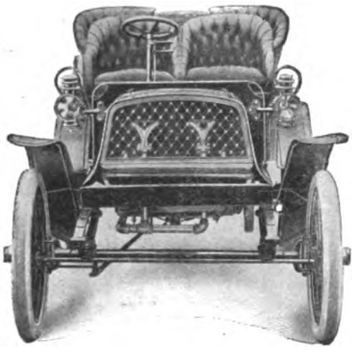
Runs noiselessly without odor or vibration.

Unqualifiedly the most reliable machine built regardless of motive power or selling price.

WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.

PREMIER

AIR COOLED DIRECT RADIATION



The car for the agent to handle because it makes sales. The car for the driver to buy because it is pleasing in appearance, roomy, light per horse power, embodying only the most up-to-date mechanical ideas and highest grade of workmanship.

"The Quality Car"—Built on Experience and sold on Merit.

Premier Motor Mfg. Co.
INDIANAPOLIS, IND.

HEALTH FOR YOU

flows out of the rocks at the various medicinal springs at

FRENCH LICK-WEST BADEN SPRINGS

in the highlands of Southern Indiana. This is the season of the year when a brief visit there will restore the normal balance of your system—renew appetite—put you in condition.

Outdoor and Indoor Recreations in Plenty—Golf Playing Now.

Superb Hotel Accommodations.

MONON ROUTE
CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY

Hotel Rates range from $8 to $35 per week, including free use of all the waters.

Booklet telling all about the waters and giving list of Hotels and Boarding Houses, with their rates, sent free.

FRANK H. REED, Gen. Pass. Agt., Chicago.
CHAS. H. ROCKWELL, Traffic Man.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This new edition of this handsomely bound and artistically printed book, containing illustrations of about 125 gasolene cars, will be ready for mailing about Feb. 1st, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

The 1904 edition is now out of print.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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Oct. 20, 1904.

Veeder Mfg. Co.,
Hartford, Conn.

Gentlemen:—

We take pleasure in stating that we have equipped our entire product of STEVENS-DURYEAS the past year with your Odometers, and have not had a single complaint.

We have found your Odometers entirely satisfactory, and accurate. We shall continue to equip our runabout for the season of 1905 with same.

Very truly yours,

J. STEVENS ARMS & TOOL CO.,
AUTOMOBILE DEPARTMENT.
C. C. Hildebrand, Sales Mgr.

A bare car on which the purchaser must spend further time and money to supply deficiencies of equipment, is not as attractive as a complete, well-equipped car.

Veeder Odometers are properly a part of the regular equipment. Men want them on their machines. Our sales and re-orders show that.

Instead of trying to skin through with as little as possible in the way of equipment, assume an inexpensive liberality and supply Veeder Odometers. An odometer has a very great interest for the man who runs his own car, and when it is supplied, it conveys an impression of considerate forethought on the part of the manufacturer.

The cost of supplying Veeder Odometers is proportionate to the number of cars you sell, and is not a heavy fixed charge.

The Veeder Manufacturing Co.

26 Sargeant Street, Hartford, Conn.

Makers of Cyclometers, Odometers, Tachometers, Counters and Fine Castings.



Special Trade Prices!

We are now making special quotations to jobbers who catalog

VOLIER HORNS.

Volier Horns



The **VOLIER DRAGON**: Double turns not only add to the beauty of the horn but by providing a longer vibration chamber or sounding board, produce a deep, swelling, powerful tone.



No other horn enjoys the high reputation that the **VOLIER** has earned. The non-corrosive reeds and the chemically cured bulbs have proved such superior features as to make the VOLIER the standard for motor car equipment. About 80 per cent. of all the cars made this year were equipped with VOLIERS.

THE POST & LESTER CO., 36 Sargeant Street, Hartford, Conn.

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BUICK

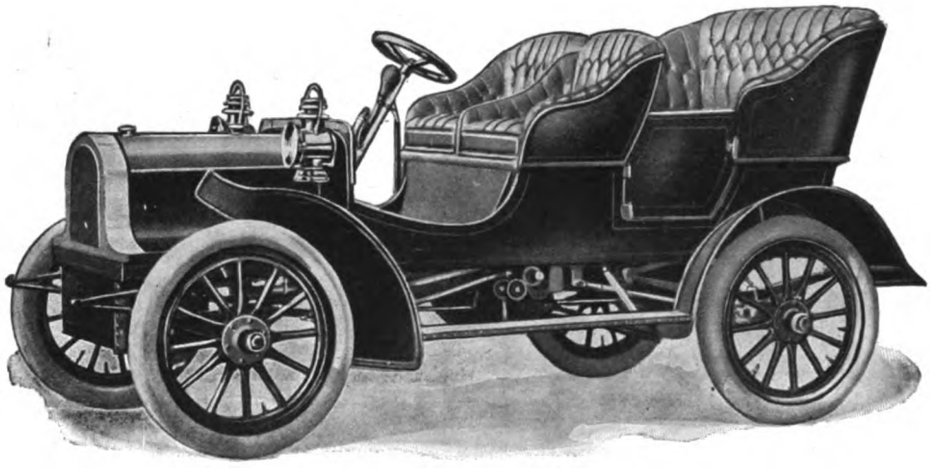
Good Everywhere

BUT

Best on Hills.

**A sensible car, at a sensible price,
for sensible people.**

BUICK BUICK



MODEL "C." PRICE, $1200.

GUARANTEED 22 B. H. P.

**Correctly Designed, Honestly Constructed,
Complete in Every Detail.**

A NEW STANDARD IN AUTOMOBILE VALUES.

For further information address

BUICK MOTOR CO.

Factories:
FLINT AND JACKSON, MICHIGAN.

JACKSON, MICHIGAN.

Members Association Licensed Automobile Manufacturers.

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Capital (paid in), = $500,000.

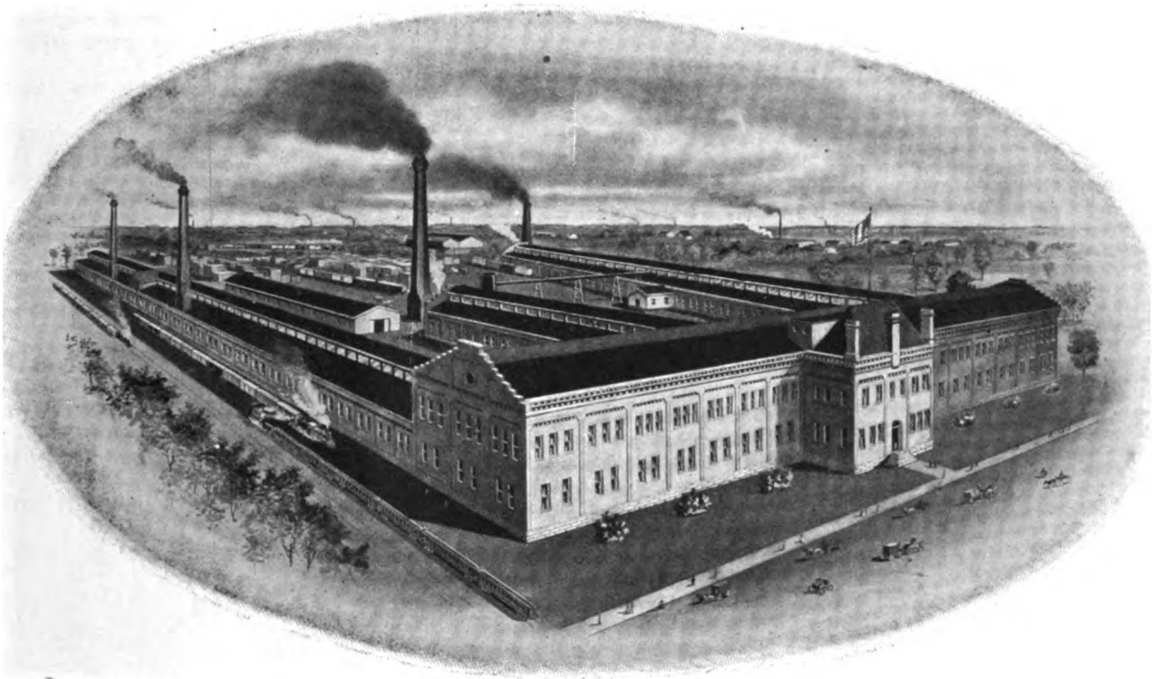
OFFICERS.

C. M. BEGOLE, President. DAVID D. BUICK, Secretary.
W. S. BALLINGER, Treasurer.

DIRECTORS.

W. A. PATERSON,	W. F. STEWART,	W. S. BALLINGER,
J. H. WHITING,	GEO. L. WALKER,	C. M. BEGOLE,
W. C. DURANT,	P. H. WITHINGTON,	D. D. BUICK.

BUICK BUICK



THE HOME OF THE BUICK.
The largest automobile plant in Michigan.

It requires something besides **"capital"** and **"plant"** to make automobiles—that is the reason why Mr. Walter Marr, the recognized expert, who has had over 20 years' experience in this line, is associated with us as designer and superintendent of construction.

All communications regarding Agencies should be addressed

BUICK MOTOR CO.

Engine Works:
FLINT, MICHIGAN.

JACKSON, MICHIGAN.

LOOK FOR US AT THE NEW YORK SHOW.

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BUICK

Our New Model "C."

In view of the wonderful popularity of this Car, evidenced by the contracts already booked, we have decided for the present to abandon all other styles. Model "C" is the ONLY CAR we will build for the season of 1905.

DESCRIPTION—Side entrance tonneau with rear seat sufficiently wide to carry three people comfortably. Extra wide door (hinged in front), having perfect clearance and giving easy access. Planetary system of transmission. Six steel gears (no fibre or internal gears), two speeds forward, one reverse. Gear parts run in oil bath and enclosed in dust-proof case. Divided crank case permitting access to bearings without removing engine from chassis. Oil reservoir cast in crank case cover. Square fin continuous coil radiator. Raymond double acting band brake. Tilted steering column. Mechanical force feed multiple oiler. Splitdorf double spark coil. Clincher tires 30x3½ in. Laminated wood dash fastened to hood and entirely separate from body—permitting removal of body without disconnecting any of the wires or small tubes. Hood, French type, containing gasoline and water tanks. Gasoline tank holds 16 gallons, sufficient for 250 miles. Wheel base, 85 inches. Weight, 1,700 lbs. Finish, Royal Blue with fine Gold Stripe. Running Gear, Ivory White. Equipment, two No. 17 "Stay-lit" bullet lamps and tail light. Volier horn with screen and cable.

BUICK

BUICK

A FEW AGENCIES.

ORLANDO WEBER,
Chicago & Milwaukee.
Agent for States Illinois and Wisconsin.

POWELL AUTOMOBILE CO.,
Omaha, Nebraska.
Agent for State of Nebraska.

MICHIGAN AUTOMOBILE CO.,
Grand Rapids, Michigan.
Agent Western Michigan.

OHIO MOTOR CO., Cleveland, Ohio.
Agent for State of Ohio.

TREMONT GARAGE,
541 Tremont Street, Boston, Mass.

PENN. ELECTRIC VEHICLE CO.,
Philadelphia, Pa.

H. J. KOEHLER AUTO CO.,
Newark, Orange, Montclair.
Agent for Northern New Jersey.

We have on file several hundred applications for Agencies. The more important points will have our first attention—others in regular order as fast as we can reach them.

BUICK MOTOR CO.

JACKSON, MICHIGAN.

WATCH THIS LIST GROW.

ONE THING AT A TIME AND THAT WELL DONE.

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BUICK

Our Claims.

A 4½x5-inch double opposed cylinder engine, developing 22 B. H. P.

A car that will take any hill, "suitable or safe" for automobiling on high speed gear.

A "car of quality" as well as power—simple in construction—built for wear.

A car that can be operated almost exclusively on high speed gear—range of speed on high gear 3 to 45 miles per hour.

Our Performance.

BUICK

At Eagle Rock, Thanksgiving, November 24, 1904. The phenomenal record made by a regular stock model "Buick" taken from the garage of Mr. H. J. Koehler, our local dealer, at Newark, N. J. The car used in this contest was not specially built or geared for Hill Climbing or racing, nor was it operated by a professional.

BUICK

NOTE: — Many of the cars in this event were specially built and specially geared and driven by factory experts.

CARS.	PRICE.	H. P.	TIME.
Pope-Toledo	$3500	24	2.15 4-5
BUICK	**1200**	**22**	**2.18 2-5**
	Winner in its class over seven competitors in sensational record-breaking event. Former record by cars of this price, 4.13½.		
Mathewson	$5000	24	2.21 4-5
Thomas	3000	40	2.42 4-5
Columbia	4000	30	2.53 4-5
Franklin	1650	10	4.08 3-5
Rambler	1350	16	5.25 1-5

Referring to the above, it will be observed that we are using higher priced cars only for comparison. We respectfully refer you to official record for performance of lower priced cars.

BUICK MOTOR CO.

JACKSON, MICHIGAN.

IF YOU WANT POWER BUY A BUICK.

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BUICK

A Letter.

NEW YORK OFFICE
BUICK MOTOR COMPANY,
52 Broadway.

December 20th, 1904.

JAS. ARTMAN, President,
Cycle & Auto. Trade Journal,
Philadelphia, Pa.

Dear Sir: The statement made by your Mr. Arnold (writing under the nom de plume "Hugh Dolnar") in October, 1904, issue "Cycle & Automobile Trade Journal," to the effect that in his presence and with Prony Brake in good order, the "Buick" two-cylinder 4½x5-inch Motor developed 22 7-32 H. P. at 924 R. P. M. *is generally discredited.* I believe some of our competitors "who need more power and don't know how to get it" are very largely responsible for it—at the same time, I think we are both interested in setting the public right.

The "Journal," as one of the leading publications devoted to the upbuilding of the Automobile industry, *cannot* afford to let the impression prevail that its special correspondent is sent out to misrepresent, and I am equally certain that the Buick Company *will not* make any claims that cannot be substantiated.

This matter should be taken up promptly and vigorously. What have you to suggest? Wire fully, my expense.

Respectfully yours,
W. C. DURANT,
for Buick Motor Co.

BUICK BUICK

We Will Meet You at the Philadelphia Show.

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BUICK

The Reply.

OFFICE

CYCLE AND AUTOMOBILE TRADE JOURNAL.

Philadelphia, Dec. 20th, 1904.

BUICK MOTOR CO.,
52 Broadway, N. Y. City.

Gentlemen: It is not usual for Journals of "standing" and "character" to take notice of rumors or through their editorial columns discuss the relative merits of competing lines. As this is a case involving our "veracity" and "intent," we are most decidedly interested, and not only thank you for bringing the matter to our attention, but will be pleased to co-operate with you in proving our absolute good faith.

We are not surprised that the statement to the effect that your Messrs. Buick and Marr have succeeded in producing a 4½x5-inch two-cylinder engine of 22 B. H. P. created a sensation, as it is certainly very much in excess of power usually developed by engines of this size.

We made the statement as a news item of interest to all makers and users of Automobiles. We considered it worthy of special notice and attention, as we thoroughly believed that Mr. Arnold's figures were correct, knowing him to be a man of great ability and experience in mechanical matters. It will not be difficult to verify Mr. Arnold's statement, and, as he is in Michigan, we have instructed him to visit your factory at Flint again, and prove his figures, so that there can be absolutely no doubt about them.

Respectfully,

CYCLE & AUTOMOBILE TRADE JOURNAL,
JAMES ARTMAN, *Editor.*

BUICK BUICK

SOMETHING DOING LATER—BUICK MOTOR CO.

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BUICK

MORE POWER, MORE SPEED,

MORE ROOM AND STYLE.

LESS VIBRATION. LESS NOISE.

LESS WEIGHT PER H. P.

than any Car for the money

in the market.

BUICK MOTOR CO.

JACKSON, MICHIGAN.

Member Association Licensed Automobile Manufacturers.

WE WANT GOOD AGENTS, NOT LARGE ORDERS.

BUICK BUICK

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BUICK

We are very young yet, but quite proud of our start.

Don't forget the name "Buick."

The fact that so many good people want us is certainly a compliment.

Don't forget the name "Buick."

We conclude that our friends believe in us and in our ability to "make good"—we will try not to disappoint them.

"Don't forget the name "Buick."

BUICK BUICK

BUICK MOTOR CO.

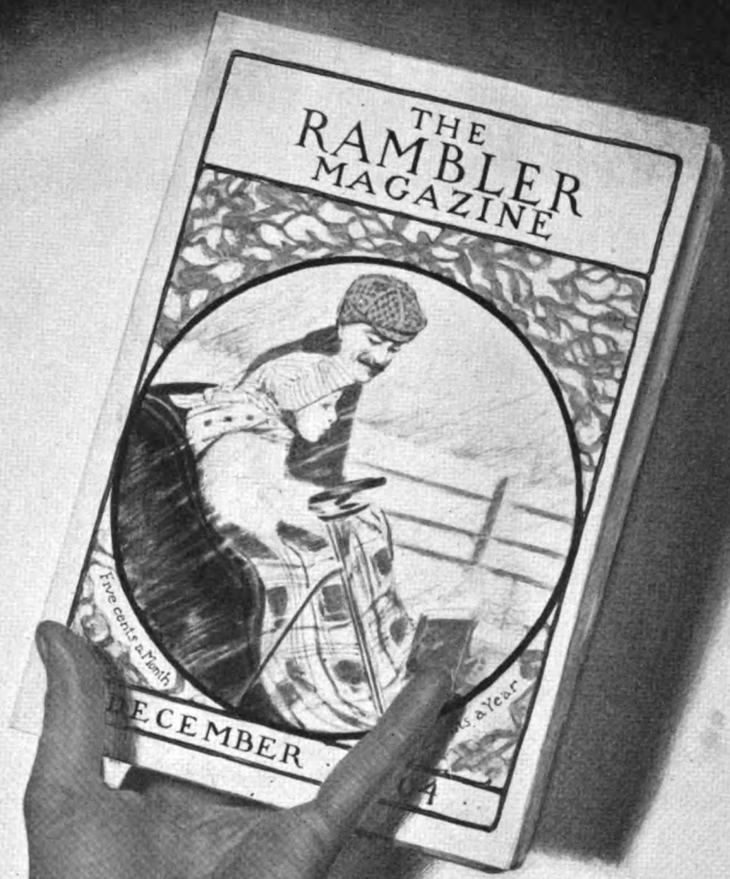
Our Motto: "SATISFIED CUSTOMERS."

JACKSON, MICHIGAN.

LOOK FOR US AT THE CHICAGO SHOW.

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Rambler



The current issue of THE RAMBLER MAGAZINE contains a thorough description of our 1905 models, and other items of general interest. A copy will be sent, free, on request.

THOMAS B. JEFFERY & COMPANY,

Main Office and Factory, KENOSHA, WISCONSIN.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, December 22, 1904. No. 13

ENCOURAGING CLOSED CARS

Electric Vehicle Co. Greatly Enlarges Its Line of Bodies—The Prices That Apply.

It already is quite plain that development in body construction, which carries with it development in the closed type of cars, is to be one of the features of the new year.

The disclosures this week of the 1905 line of the Electric Vehicle Co. shows this trend very clearly. Those luxurious forms of closed bodies that have long marked their electric productions will no longer be limited to that class of vehicle. Instead the big Hartford concern will regularly offer five choices of body with their new four cylinder 40 horsepower Columbia, and will also build special designs to order. The standard body will be, of course, of the side entrance tonneau type, and so fitted the car will list at $4,000, the same price at which their 30-35 horsepower car was catalogued this year. The royal victoria, the straight front landaulet, extension front landaulet and limousine are the other bodies that will be offered.

The new 16 horsepower Columbia, with two cylinder vertical engine, will be priced at $1,750, and the 12-14 double opposed car, which this year sold for $1,750, has been reduced to $1,500.

In electrics the Electric Vehicle Co. will market one new model, the Victoria phaeton, as it is styled, at $1,350; the runabout, which this year listed at $850, has been advanced to $900.

Mitchell Adds to Capital.

Amended articles of incorporation were filed with the Wisconsin Secretary of State last week by W. T. Lewis, president, and V. G. Rogers, secretary, of the Mitchell Motor Car Co., of Racine. Under these the capital of the concern is increased from $300,000 to $500,000. The new capital is to be used for the purpose of increasing the business of the company. Additional factory buildings will be erected early in the spring. The number of men will be increased, and the work of building the new Mitchell models rushed.

Second Dividend for Conrad Creditors.

The final meeting of the creditors of the bankrupt Conrad Motor Carriage Co., Buffalo, N. Y., will be held in that city on the 28th inst. The trustee has a cash balance of $3,625.42 on hand, out of which a second and final dividend will be declared. The disputed claim of the Pennsylvania Electric Vehicle Co. will also come up for settlement, and a date by set for auctioning the remaining effects of the bankrupt, which consist chiefly of accounts receivable, records, etc.

Pegasus Charges Misrepresentation.

Two Chicago automobile concerns are involved in litigation in the Superior Court of that city through the action of the Pegasus Automobile Company. It seeks to regain $6,000 worth of material which it asserts was conveyed to the Royal Automobile Company by misrepresentation.

Duerr Will Change Name.

On December 31 the firm of Duerr, Ward Co., Broadway and Fifty-eighth street, New York, will cease to exist, C. A. Duerr & Co., Inc., taking its place. The change is one of name only, C. A. Duerr having purchased the interest of his partner, Ward, some months ago.

Medal for Rollin White.

Rollin H. White, the designer of the White steamer, was among those honored by the St. Louis Exposition because of the merit of their inventions. He was awarded a gold medal. The car itself, as will be recalled, was given a grand prize.

Prices of The Pope-Toledo.

For 1905 the Pope-Toledo will be marketed in three models, 20 horsepower (front entrance), at $2,800 and 30 and 45 horsepower, both with side entrances, at $3,500 and $6,000, respectively. The 50 horsepower "Pullman" will be built to order only.

"Something Doing" in Elyria.

The presence of Charles M. Schwab, the steel magnate, in Elyria, Ohio, is reported this week. He is in conference with A. L. Garford, the head of the Federal Manufacturing Co.

ENFORCING FIRE REGULATIONS

New York Authorities Inspecting Garages and Strictly Applying Laws Concerning Gasolene.

"Garage owners must hereafter obey the law—the spirit of the law as well as the letter. The regulations regarding the storage and sale of gasolene, which the automobile dealers themselves helped to frame, will be strictly enforced from now on."

This is the dictum of Fire Commissioner Hayes, as delivered by George E. Murray, superintendent of the Bureau of Combustibles, New York Fire Department. Mr. Murray was seen on Tuesday at his office in the Fire Headquarters Building, in West Sixty-seventh street. He had a copy of the Motor World before him when he spoke.

"I hope the Motor World will lay particular stress on the fact that no heating stoves or furnaces will be allowed in garages," he continued. "In future all heat, or steam used for heating, must come from outside the building. If stoves or furnaces were used for heating garages there would always be danger of fire, and their use is absolutely prohibited for that reason. There would always be danger in the daytime, and at night there would be even more likelihood of a fire, as no watchmen are employed at many of the places. Even where there is a watchman, one man could do very little toward saving property if a fire should break out and it got beyond his control.

"It is my opinion that the fire which destroyed the garage of the Standard Automobile Co. was caused by the heating furnace, which stood at the back of the building, as there was no basement there. Gasolene vapor travels in a 'thread,' which varies in size from a hair to about the thickness of a lead pencil. The wagon which was delivering gasolene there just before the fire started had a valve which was much higher than the bottom doors of the heating furnace. I think the driver of the wagon made a faulty connection between the feed pipe of the storage tank and the valve of his wagon, and that it was a gasolene 'thread' from his wagon that caught fire from coals in the bottom of the

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furnace. It is to prevent anything of that kind from happening that the Fire Commissioner refuses to permit heating stoves or furnaces to be used in garages in the future.

"So far as explosions are concerned, there were none at all on the ground floor of the Standard building except from heated tires," said Mr. Murray in response to a leading question. "There were two explosions on the upper floor, and they were of sufficient force to turn the heavy automobiles completely over. The two machines which were damaged by the explosions had their tanks closed by caps which did not allow the vapor to escape. The caps on the tanks on the ground flood had vents which allowed the vapor to get out, and it was burned just as a strong gas would be, and there were no explosions on that account."

Mr. Murray then threw some further light on the intentions of the Fire Department.

"No license for the storage of gasolene will hereafter be granted where the 'day population' of the building above the garage is one hundred people or more," he said. "In cases where a license has been granted, and it is found that such conditions exist, the license will be revoked. Above the garage of the Michelin Tire Co., whose license was revoked last week, it was found that 250 people were employed on the several floors. Of this number 146 were women and girls. There are only two elevators in the building, and they will carry but four persons and the elevator man at a time. The stairways are very narrow, and if the people employed above the garage were to try to get out in case of a fire many of them would surely be injured. If they could be stood in line and marched out as school children in fire drills it would take at least ten minutes to empty the building. When these facts were brought to the Commissioner's attention he revoked the license at once."

While the Fire Marshal has not made his official report of the investigation he has been conducting into the cause of the fire in the Standard Automobile Co. garage, it seems very likely that the opinion of Superintendent Murray as to the fire's origin is the correct one. In the published reports of the fire the Motor World was the only publication which told of the heating furnace in the rear of the building, and which now seems to be regarded as the cause of the blaze.

The regulations adopted by the Municipal Explosives Commission of the City of New York for the storage of gasolene in "automobile storage stations," and which will now be enforced to the letter, are as follows:

Section 38. In automobile storage stations the storage of naphtha (gasolene) shall be by one of the following methods only:

(a) In an iron or steel tank of design and construction as approved by the Fire Commissioner, said tank to be buried underground with the top at least two feet beneath the surface, and the maximum amount stored therein shall not exceed two hundred and seventy-five gallons; not more than one tank shall be permitted upon the same premises,

(b) In approved sealed metal cans, to a maximum amount not exceeding fifty gallons.

Sec. 39. No sale of naphthas shall be made in automobile storage stations excepting in the transaction of their regular business in the way of filling the tanks of automobiles, and no sale of these products in cans shall be made in such stations in less amount than the entire contents of an original, sealed and unbroken package.

Sec. 40. Immediately upon receipt of naphthas in such stations the same, unless contained in cans, shall be transferred to the storage tank in such manner as to prevent the leakage or dripping of the liquid after the connecting pipe is removed.

Sec. 41. No automobile storage station shall receive a permit for the storage, sale or use of naphthas where the following precautionary regulations are not observed:

(a) Sand shall be kept in buckets fit and available for absorbing waste oil that might fall upon the floor, and such sand when saturated shall be removed to a safe place and burned free from the oils. The use of sawdust for this purpose is strictly prohibited.

(b) No naphtha shall be put into or taken out of an automobile within fifty feet of an open fire, nor until lamps or other apparatus intended to be carried upon the vehicle for illuminating purposes or as pilot lights have been extinguished.

(c) In no case shall naphtha be allowed to run upon the floor or to fall or pass into the drainage system of the premises.

(d) Naphtha shall not be carried in open vessels about the premises; if it is necessary to convey naphtha it must be done in approved closed can or cans with an automatic closing device which shall effectually close same, and of the capacity most closely adapted for filling the machine, but not exceeding five gallons.

(e) If it is necessary to empty the tanks of automobiles, it shall only be done with the utmost precautions against fire, and the fluid must be returned directly to the approved can or cans with the automatic closing device which shall effectually close same.

(f) Buildings of this character shall be lighted only by inclosed electric light.

Sleuth at Paris for Licensed Makers.

Although for some reason his identity is shrouded in secrecy, and nothing was said of his departure, it is stated that the Association of Licensed Automobile Manufacturers had an expert engineer nosing around and taking notes at the Paris show. The idea of the association is to present a first-hand report of the show to all its members. The expert will, of course, reduce his observations to writing and accompany them with sketches of such subjects as he believes will interest the manufacturers concerned. Later the report will be read and discussed by the superintendent of the Superintendents' and Engineers' branch of the association, which, it is said, conceived the idea of having a man on the ground in Paris.

Minneapolis Has a Broadway.

Minneapolis, Minn., business men have organized the Broadway Automobile Co. and elected these officers: F. A. Wing, president; W. G. Norris, vice-president; C. L. Roy, secretary; Edward W. Herald, treasurer. The trustees are C. L. Roy, W. G. Norris, H. B. Hallam, Joseph W. Parker and F. A. Wing. The concern will locate in a new brick building, which is now erecting at the northeast corner of Madison avenue and Broadway. The company will occupy nearly all the ground floor, and will have storage room for about seventy-five cars, besides an ample repair shop.

President Wing has returned from a trip to Cleveland and Detroit, where he arranged to handle the Winton and Cadillac lines.

Negro; Cigar; Then Fire Engines.

The garage of the Mississippi Valley Automobile Company, St. Louis, narrowly escaped destruction on Sunday evening last. Apparently the "not smoking" rule is not vigorously enforced, and it is stated that the damage that resulted was caused by the action of a negro helper in lighting a cigar and throwing the match on the floor beside a two-gallon can of gasolene. In the fire that resulted the negro was the worst sufferer. He was badly injured, but all save two of the automobiles on the ground were removed in safety. These two sustained damage to the extent of $900, while the interior of the garage was also slightly damaged.

Buick in the Biggest Garage.

Frank D. Stranahan, proprietor of the Tremont Garage, is the lucky man in Boston, Mass., to secure the Buick agency. It is not generally known that this is claimed to be the largest garage in the world. It occupies the old Cyclorama Building, at No. 541 Tremont street, which has 40,000 square feet of space on the ground floor and 150 feet in the arena. It will accommodate 1,000 cars. There are fourteen pits in the floor.

Increase in Scranton Trade.

A number of well known Scranton (Pa.) business men have organized the Scranton Garage & Motor Car Co., with a capital of $25,000, and will apply for a charter. One or more lines of cars will be sold, and a garage business conducted. Temporary quarters will be secured, and in the mean time a location will be secured and a building especially designed for garage purposes erected.

Banker's Order for Pierces.

Brief as was the visit of A. L. Banker, of the Banker Bros. Co., Pittsburg, to Buffalo last week, it resulted in the booking of a $100,000 order. The George N. Pierce Co. was the recipient of the order, which was for 25 Great Arrow cars. Five of these were the $5,000 and 10 each of the $4,000 and $3,500 models.

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LEGAL LIGHT ON REMINGTON

Litigation Brings Out Woes of Doing Business on Small Capital—An Unique Sales Record.

Although the property of the defunct Remington Automobile and Motor Company of Utica, N. Y., has been sold, the liability of the stockholders for the unpaid portion of their stock still furnishes litigation for the courts. At Utica last week an array of legal talent was present to argue the matter before Judge Ray. Evidence was being taken in the proceedings brought by L. N. Southworth, trustee in bankruptcy, to compel certain of the stockholders to pay a balance of 70 per cent. claimed to be due on their stock.

The testimony brought out related largely to the early history of the concern and of its predecessor, the Ilion Automobile & Vehicle Company, of Ilion, N. Y. S. C. Burch, of Ilion, who was a member of the firm known as the Ilion Automobile and Vehicle Co., which sold out to the Remington Co., testified that he kept the books of the concern for some time. He was the holder of 66 shares in the Remington Co. In the course of his testimony he said that the Ilion company turned its assets over to the Remington company, receiving stock in the latter as payment therefor. When questioned, he said that when the transfer was made, the Ilion company had no outstanding accounts and no debts, and had sold no motors. Attorney De Angelis endeavored to find out what the Ilion company did have, but without much success.

It was stated that the Ilion company received $52,000 in stock for whatever it was that it transferred to the new Remington company.

James S. Holmes, Jr., former general manager of the Remington Co., in the course of his testimony, said:

"The committee of the Utica Chamber of Commerce decided that it would be most advantageous to the company if Mr. Schmidt and I were to come here. I had been receiving $3,000 a year at Ilion, but under the circumstances I agreed to come here for $1,500. Mr. Schmidt did not come. Mr. Van Sickle came in his place. Just before coming here the company in Ilion was principally engaged in trying to get money. We had but one order that I can remember of. We had only such funds as capitalists in Ilion had put up. As to credit, we were able to buy locally oil, coal, etc. We did not attempt to buy stock. We were gradually getting further into debt. At the time the Chamber of Commerce came down to our relief we had negotiated with other parties for funds, but it was our belief that we had either to accept the offer of the Chamber of Commerce or fail. We had attempted unsuccessfully to make arrangements for funds. Stock in the company was sold locally for $25 a share, or 25 cents on the dollar. We had been unable to sell the stock outside."

The testimony was principally to the effect that the agreement entered into between the Chamber of Commerce and the Remington Co., whereby the latter located in Utica, was made in good faith; that, as a matter of fact, it was carried out with such changes or substitutions as were subsequently agreed upon; that the company was satisfied with the manner in which the chamber discharged its obligations, and that the stock was in reality well paid for.

The Week's Incorporations.

Boston, Mass.—Eastern Motor Vehicle Co., under Massachusetts laws, with $50,000 capital. Officers—Charles G. McClutchen, Frank W. Richards, treasurer.

Portland, Me.—Constant Spark Plug Co., under Maine laws, with $50,000 capital, $500 paid in. Officers and corporators—H. L. Cram, president, and Charles H. Weston, treasurer.

Middletown, Conn.—Hubbard Motor Co., under Connecticut laws, with $100,000 capital; to begin business with $50,200. Corporators—H. W. Hubbard, John T. Eugenian and Robert H. Downes.

Chicago, Ill.—Commercial Automobile Co., under Illinois laws, with $5,000 capital; to manufacture motor vehicles. Corporators—Paul Carpenter, Albert G. Miller and Albert C. Howard.

Garwood, N. J.—Motor Construction Company, under New Jersey laws, with $50,000 capital. Corporators—Henri G. Chatain, Gustavus T. Kirby, P. C. Midgley and William B. Elliot.

St. Louis, Mo.—Park Automobile Co., under Missouri laws, with $10,000 capital, one-half paid in; to do a general automobile business. Corporators—A. T. Primm, jr., and Charles E. L. Thomas.

Columbus, Ohio—The Curtin-Williams Automobile Co., under Ohio laws, with $5,000 capital; to do an automobile manufacturing business. Corporators—T. E. Curtin, Roy O. Williams, Frederick Wardlow, Alfred A. Williams and Charles Wardlow.

St. Louis, Mo.—South Side Autotmobile Co., under Missouri laws, with $5,000 capital, full paid; to manufacture and deal in automobiles. Shareholders—William R. Orthwein, Newman Samuel, Louis A. Hoerr and John Hoerr, jr.

Jackson, Fla.—The East Coast Automobile Co., under Florida laws, with $10,000 capital; to conduct a general wholesale and retail business in automobiles, motor boats and marine engines. Corporators—P. L. Sutherland, Guy R. Champlain, E. A. Groover, A. D. Covington and A. S. Hubbard.

Geisel Prepares for Enlargement.

The Geisel Automobile Co., Springfield, Mass., have been incorporated, under the laws of Massachusetts, with $35,000 capital. They have taken the agency for the Winton and Cadillac, and in the spring intend to build what will be one of the largest automobile stations in New England.

FACTORY VISITS FASHIONABLE

Practice of Showing Customers Processes of Manufacture a Growing One—Its Effect on Sales.

"Buyers of cars are getting the 'factory fever' in a pronounced form," said a local tradesman to a Motor World representative one day this week. "If it goes much further it will soon be impossible to sell a car except 'subject to inspection and approval of the factory.

"It works something like this," he continued, in a half disgusted tone: "A man came in the store this morning and asked to be shown a car. He proved to be really interested in the car, listened intelligently to all I had to say, and I began to think that I was going to book his order then and there. But just as I was patting myself on the back and getting ready to take down his specifications he took the wind out of my sails by saying:

" 'I like your car very well, indeed, and before I decide I shall give it serious consideration. But I have an engagement to go to the Blank factory to-morrow—travelling by car, if the weather is good, or by train if it storms—and make a tour of inspection there. They are very anxious to have me go through it, and I have several friends who have done so. Now, I suppose you would have no objection to my doing the same with your factory? I should not care to place my order unless I had first seen something of the methods and processes in vogue there. You see, I should feel so much more comfortable and satisfied after making an examination of this kind.'

"Of course, there was but one thing to do, and that was to say yes. I told him that we should be glad to show him through our factory, as we were not afraid to have it known what was being done there. He said that he would see me again, and make an engagement, and with that understanding we parted.

"How do I like it? Oh, I don't mind so very much. Of course, it delays a sale and adds something to the difficulty of making it; besides, our factory is nothing like as large as the one he is going to inspect before ours, and that may hurt us. But if he has intelligence enough to disassociate quantity from quality, and to note the care with which we build, the quality of the material we use and the admirable system of manufacture, his decision can scarcely be anything but favorable to us."

Four More Get Show Space.

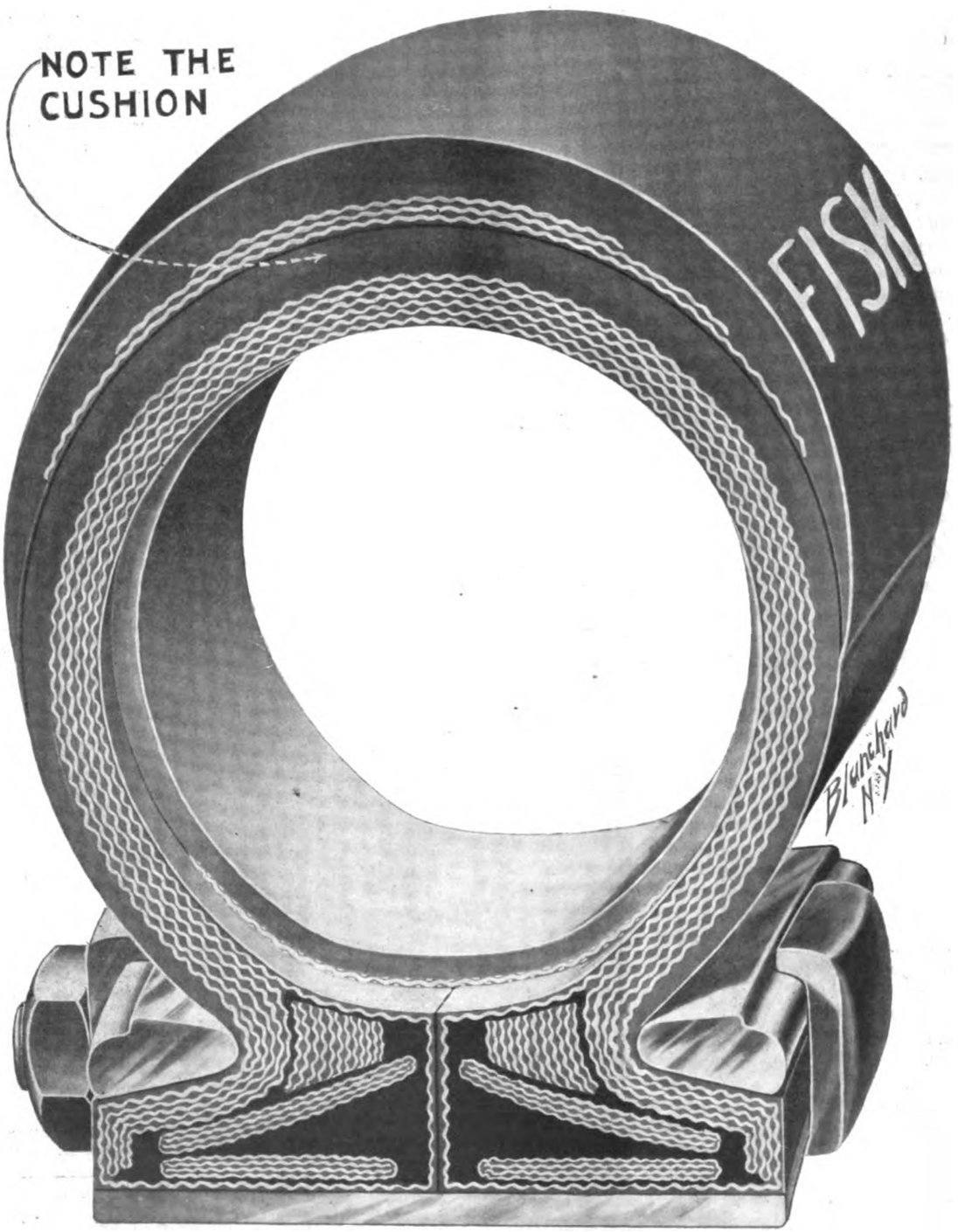
The space on the stage in the concert hall of Madison Square Garden, which was not allotted by the Motor & Accessory Manufacturers when they apportioned their share of show space, has been given to the Hess-Bright Co., Philadelphia, the Wheeler Manufacturing Co., Detroit, and the Autocar Equipment Co., Chicago. The space vacated by C. A. Metzger has been awarded to the Consolidated Manufacturing Co., Toledo.

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HERE IT IS!

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HEAVY CAR TYPE



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THE MOTOR WORLD

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NEW YORK, DECEMBER 22, 1904.

Carburetters to the Fore.

As usual, the first bona fide and informing report of the Paris show comes from the well versed correspondent of the Motor World. His report, published in another column, shows his excellent grasp of the situation, and in the fewest words points out quite plainly the trend of foreign trade.

It is evident that the day of sensational developments has passed, and that the improvement of automobiles is proceeding on certain well defined lines, all making for increased efficiency; indeed, increased efficiency may be reckoned the keynote of the Paris show, and this, as always, is obtained by attention to and improvement of details.

It is not strange that attention to the carburetting systems has been one of the chief factors in achieving results. The carburetter may be said to be the only, or at any rate the principal, vital part of the automobile that has not received its full meed of notice and improving care. That it finally has come or is coming "into its own" is a sign of much promise.

If sensations are in store, of which, however, there is no indication, we believe they will develop in the form of carburetters. There is small doubt but that the fluctuations in the horsepower of engines of similar dimensions are due almost wholly to differences in carburetting. The idea has too long prevailed that increase of efficiency and power, which are largely the same thing, is to be had only by the employment of larger motors, which carry with them increase of bulk and weight and strains in many parts. Ultimately we are sanguine that it will be shown that the same results, or better, and without increase of bulk or weight, are possible by improved means of carburetting. From this distance, the prominence of carburetters at the Paris show stands out clearcut and well defined, and holds hope of efficiency of the sort that is appreciated not less by makers than by users.

Visits to the Factories.

How quickly a new fashion "catches on" is shown by the growing popularity of the practice of making factory inspections. The practice itself is not new; prospective purchasers have journeyed to factories and examined the processes in vogue there to their own satisfaction and with the entire approval of the makers. But the custom was little observed and then only incidentally. The representative of a maker might comment favorably on a desire expressed to inspect a factory, or even extend an offhand invitation to do so. But such comments or invitations were purely casual and rarely resulted in a visit being actually made.

The present movement is a totally different one. It was conceived originally as a shrewd scheme to clinch sales that were or seemed to be doubtful, or which for any cause could not be closed. In its ideal form, the plan is to drive the customer to the factory and conduct him through the latter for the purpose of enlightening him on the subject of motor car construction and making it perfectly clear that a well organized and finely equipped plant is absolutely necessary for the construction of an up-to-date car. "Let me drive you up to the factory some day soon and show you our improved processes of manufacture," the invitation would frequently be couched. "By so doing you can obtain a splendid demonstration of our car and then see how we make it." To some customers a proposition of this sort appeals with great force, and it is not astonishing that many such runs have been made, especially before the approach of winter, with its cold and snows, robbed them of the greater part of their attractiveness. But it did not stop even there. When the drive by motor car became unpleasant, there still remained the railroad train as a swift vehicle, capable of bridging the distance between town and factory. It presented the additional advantage of increasing the radius of action and bringing factories hundreds of miles away within the scope of operations. The drive in the car under consideration was cut out entirely, of course; but there remained the run through the factory, which to the intelligent non-mechanical visitor was certain to be an eye-opening process, and to the man of mechanical knowledge was a joyous journey.

Here and there will be found tradesmen who do not believe in encouraging this movement. It may be owing to their not feeling satisfied that their factories will make a favorable impression on visitors, whether because of the small size, imperfect facilities or backward stage of the product, or because they do not wish to be bothered with visitors or they fear that sales will be delayed. All of these reasons have their influence, but the more clear sighted tradesmen welcome the visits and even make special efforts to attract them.

When spring comes and the selling season opens in earnest, the practice is not likely to be followed to any great extent. Buyers will be too impatient to visit factories, to say nothing of having looked over the field and made up their minds.

Lack of Holiday Trade.

Perhaps the dullest week since last winter in local trade circles has been the present one. The heavy downfall of snow has put the finishing touches to a period when buyers are disposed to hold off, in view of the nearby shows, and the result has been almost total stagnation in practically every store in the city. In all probability the same condition has prevailed in most cities and towns throughout the country. Seemingly no effort was made to secure business; dealers reasoned that no one was disposed to buy, and that it would be a waste of time to take any steps to effect sales.

The unanimity with which a cold shoulder has been turned to the Christmas time, and

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the holiday buying throng ignored is nothing short of remarkable. It is almost as if these did not exist. Asked if there had been any Christmas buying, most dealers smiled pityingly and said no; some of them added that people were not likely to buy automobiles for Christmas presents, as they were too costly. Nor had any effort been made to call automobile accessories—lamps, horns, baskets, etc.—to the attention of people who might be looking for suitable articles for Christmas presents.

There is scarcely any need to say that this is all wrong. The merchant instinct that should actuate automobile dealers and impel them to seek means of extending sales is strangely dormant, or this indifference would not hold sway. No other class of retailer permits Christmas to pass without seeking to obtain his fair share of trade. Those who deal in the cheaper classes of merchandise are the most active, of course. To them come the bulk of buyers, and they can count with reason on an enormous output. But bigger and more costly goods are by no means neglected. The makers of sewing machines, of pianos, of horses and carriages, of boats and launches, of guns and a dozen other useful but relatively high priced articles resolutely set themselves the task of capturing their quota of the holiday trade; and the retailers of such goods bid for the trade just as eagerly, adroitly and systematically as do their fellow retailers whose wares happen to suit humbler purses. And, as we all know, they obtain a very fair measure of success.

Theer is not the slightest doubt that automobile dealers could meet with similar success by deserving it. If they bid for trade of this character, conducted a regular and intelligent advertising campaign, attracted people to their stores, having first dressed the latter attractively and fittingly, there cannot be the slightest doubt that a respectable number of sales of cars would be made; while accessory sales would far exceed them in volume.

About Deliveries.

A mixture of the bitter and sweet is contained in a recent decision of a Paris court. That the automobile industry has reached a stage where the processes of production can be predicated with a reasonable degree of accuracy and certainty, and that, therefore, promises can and should be fulfilled, is the court's contention, as put forth in these words:

"In consequence of the progress made for some years in construction of automobiles, builders sometimes for the purpose of not losing an order make engagements which they are unable to fill in the stipulated time. In such cases they must be liable to damages."

The dictum was called forth by a suit brought to recover for the non-delivery of an automobile as agreed. The court found for the plaintiff and awarded him damages in the sum of $300.

While directly affecting only the French industry, the decision is of interest in this country. There are always two sides to a contract, and the one that has been most prominent heretofore is that which bound the purchaser and left the seller to all intents and purposes free. The former usually paid a percentage of the list price when he placed his order; in past years he frequently had to pay a premium or bonus as well. If he received delivery anywhere near the specified time he was content, while long delays were accepted philosophically as being a part of the game.

There can be no manner of doubt that this stage is passing—has almost passed, in fact. Prompt deliveries form the keystone of the arch of success, and no maker can hereafter afford to be dilatory in filling his contracts. Even more effective than a court decision in spurring him on will be the force of competition, the absolute necessity of taking advantage of the prevailing trade winds and obtaining every possible advantage. The penalty will be the loss of business, and that no maker can afford to risk.

Side Entrances and Baskets.

With the appearance of the side entrance car has arisen the necessity for a change in the design of the wicker baskets which are an almost indispensable adjunct of all touring cars. These were fastened to the side of the tonneau body, there being ample room between the front and tonneau seats for a basket long enough to hold almost anything the passengers desired to put there. Taking advantage of the almost uniform design of touring car bodies, basket makers produced a few standard patterns, each of which fitted a number of well known cars.

With the sudden displacement of the tonneau by the side entrance type, at least as the leading 1905 model, has arisen the necessity for either abandoning the basket and providing other means for carrying impedimenta, or of changing the designs of baskets and adapting them to be attached to the rear of the body which, of course, has no door to interfere with its disposal. A third course is to attach a small basket to the side of the body, having it short enough to extend only to the side door. Where the car has a generous wheel base this plan will be frequently followed, for we have become accustomed to the appearance of side baskets and, almost unconsciously, resent any change from them to rear ones.

At the same time, it is already apparent that the rear basket will be extensively used. Basket makers have been quick to notice the change in body construction, and some of them have already brought out baskets designed to be attached to the rear of the car. They will look a trifle odd at first, and, of course, only one basket can be fitted, in place of the two side baskets now used. But it will only be a short time before the newness of the rear basket will wear off, and there is no reason why the size of them should not be increased so they will hold as much as two side baskets.

COMING EVENTS.

Jan. 11-15—New York, Importers' Show, Herald Square Exhibition Hall.

Jan. 13—New York, Motor and Accessory Manufacturers, annual meeting, Hotel Astor.

Jan. 14-21—New York, National Show, Madison Square Garden.

Jan. 16—New York, American Automobile Association, annual meeting and election.

Jan. 19—New York, Superintendents' and Engineers' Branch of the Association of Licensed Automobile Manufacturers, meeting.

Jan. 20—New York, National Association of Automobile Manufacturers, smoker.

Jan. 21—New York, National Association of Automobile Manufacturers, annual meeting.

Jan. 21—New York, Automobile Club of America, annual banquet, Astor Gallery, Waldorf-Astoria.

Jan. 23-28—Ormond-Daytona, Fla., third annual speed carnival.

Jan. 23-28—Philadelphia, Automobile Show.

Feb. 4-11—Chicago, National Show, Coliseum.

Feb. 13-18—Detroit, Automobile Show.

Feb. 20-25—Cleveland, Automobile Show, Gray's Armory.

Feb. 27-March 4—Toronto, Automobile Show.

March 6-11—Buffalo, Automobile Show, Convention Hall.

March 13-18—Boston, Automobile Show, Mechanics' Hall.

March 13-18—Boston, Importers' Show, Symphony Hall.

March 27-April 5—Washington, Automobile Show.

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POINTS FROM PARIS

While Show Contributes Nothing Radically New Much Refinement of Detail is Apparent—Carburetter Improvement Conspicuous.

Paris, Dec. 9.—The seventh annual Paris show, or, to give it the official title, l'Exposition Internationale de l'Automobile du Cycle et des Sports, was officially opened this morning by President Loubet, accompanied by his staff and a long train of officers, Deputies, Senators, officials and journalists, who paraded the gangways and obtained a general impression of the show's appearance. At the moment the chief magistrate entered the Grand Palais the notes of "The Marseillaise" gave the signal for the cessation of the din of hammering, which, until that moment, had been ringing round the galleries. So far as the main hall was concerned, the stands were nearly complete, and only needed a few touches to put everythig in perfect order, but around the galleries there is still much to be done before the stands can be regarded as completely finished.

OPENED BY THE PRESIDENT.

As President Loubet made his official promenade, chatting with the officials and occasionally stopping to compliment an exhibitor, he certainly must have been strongly impressed, as every non-technical visitor will be, with the wonderfully artistic setting in which it is possible to display the severe mechanical lines of an automobile. Every year it is the aim of the organizing committee, and of exhibitors themselves, to give a note of originality to the exhibition. However good a thing may have been in the past it has to give way to something newer and more striking, as well as more artistic, and it must be confessed that all concerned have succeeded in making the exhibition far more attractive and wonderful than in previous years. The one central idea in organizing the show is to make it the rendezvous of Paris. Outside the Grand Palais the long lines of Corinthian columns and architraves are picked out in festoons of electric lights, and along each side of the wide avenue are great pillars supporting multitudes of lamps, while in the centre is a lighthouse that at nighttime will send a beam of light to all quarters of the city. Inside the magnificent building a vast half globe is suspended from the glass roof, covered with electric lights, and from this are hung long interminable lines of incandescent lamps. On the stands we find an almost endless variety of novel designs, from a wrought iron lighthouse to festoons of artificial flowers, each concealing an electric lamp. When the current is switched on, the whole of the palace, inside and out, is in a blaze of light, forming one of the most brilliant and artistic effects that we have seen at any show of this kind. Altogether, about two hundred thousand lamps are employed in the decoration.

Notwithstanding the mass of design, the decorations are arranged in such a way that they in no manner interfere with the perspective of the long lines of stands from one end of the huge building to the other.

The trouble that was threatened last year through the organizers being unable to find sufficient accommodation for all the exhibitors has compelled them to provide extra space, and the heavier parts of the exhibits, such as machine tools, stationary engines, motor boats, motor balloons and the like, have been relegated to the Horticultural Palace, on the banks of the Seine, within two minutes' walk of the Grand Palais. In this way nearly all the firms have been able to secure space, although none of them have obtained what they wanted, and a maker deems himself very fortunate if he can exhibit a chassis and three or four cars.

FOREIGN EXHIBITS FEW.

While great stress is laid upon the fact that the annual Paris show is international, it must be admitted that the foreign element is not so strong as might have been expected, in view of the continued progress of the automobile industry in other countries. So far as Great Britain is concerned, this may be partly attributed to an alleged sense of patriotism which induces the makers of England to patronize their own shows and save themselves the trouble and expense of sending over vehicles to be shown in competition with the French. The only British firms exhibiting are the Hozier Engineering Co., of Glasgow, who had the distinction this year of paying a dividend of 50 per cent; the Wolsley Tool & Motor Car Co., Ltd., and C. S. Rolls & Co. Nor is the United States represented in the way it should be, for the only American cars exhibited are the Oldsmobile and Pope, the latter having been just introduced into France with an idea of making a good bid for business on this side. The success of the Oldsmobiles proves, indeed, that there is something to be done in American cars if only the price is right. Other countries represented are Belgium, Germany, Italy and Switzerland.

It is always the custom to give the show a good send-off by distributing something like one hundred thousand invitations for the first day, so that the opening is nothing but a deadhead show, when the whole of the vast building is crammed with a compact surging crowd that makes it quite impossible to get more than a cursory view of the stands. An inspection of the cars at most of the leading works before they were sent to the show has enabled the Motor World representative, however, to get a fair idea of the technical changes that have taken place in e new vehicles.

PANHARD EMPLOYS HYDRAULIC REGULATOR.

Panhard & Levassor have made no change in their ordinary cars, but they are exhibiting a new 50 horsepower vehicle possessing many new features which have been tested during the last year on the racing machines. This firm is one of the very few who still employ the flitch plate and wood frame in preference to the pressed steel frame, which they use only on the racing cars. They claim that the combination of metal and wood is much more satisfactory for touring cars, in the sense that it gives a greater rigidity. Most of the makers have found it necessary to brace the pressed steel frame so as to avoid torsion through shocks when great strains are thrown on the transmitting mechanism. The Panhard engines continue to be built with cylinders cast separately, and in the 50 horsepower car the engine is governed by a hydraulic regulator, in much the same way as the British Napier. The clutch is of the type that has been employed on the racing machines—that is to say, it is composed of a number of flat metal plates placed alternately on a box on the crank shaft and on the driven shaft, so that when pressure is applied against the plates the friction of the plates against each other is sufficient to give a perfect clutching motion, at the same time that this motion is rendered gradual by the slipping of the plates until the maximum pressure is applied to them.

Another departure from the usual Panhard practice in this new 50 horsepower car is the honeycomb radiator. It is probable that this new car is intended to prepare the way in the coming season for a general change in Panhard design, although it is certain that the features referred to will not be adapted to the standard cars unless it be found that the 50 horsepower vehicle gives satisfaction in practical work.

TREND OF THE TRADE.

The way in which Panhard & Levassor are hesitating about adopting new devices is pretty characteristic of the French trade generally. Here and there we find firms making changes in detail, which, however, in nearly all cases tend to the settling down to general types. In the engines, for instance, the cylinders are generally cast separately for the sake of economy and ease of boring, and the mechanically operated induction valve is now nearly always employed, although there are still several firms who operate the valves by two half time shafts instead of having all the valves on one side so that they may be actuated by one cam shaft. The high tension magneto is making rapid headway, although it is customary to fit the accumulator and coil as a stand-by in case of accident to the magneto, which, on account of its somewhat delicate construction, is calculated to give users the impression that it is liable to get out of order. It may be taken for granted that the magneto will be so far improved as regards solidity that motor car owners will have no further fear of trouble on this score, in which event the accumulator and coil will be entirely dispensed with. At the same time the coil and trembler allow of rather more elasticity to the engine by giving a higher efficiency with an advance of ignition, but this little advantage is more than counterbalanced

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by the convenience of employing a generator of electricity.

The only way in which makers have been able to improve their engines is by paying particular attention to the carburetter. Nearly every big firm has brought out an improved carburetting device of some form or other with the object of getting a constant mixture at all speeds. Among these devices may be mentioned the new Decauville carburetter, in which the gasolene is sprayed up with the air around an elongated cone. The cone principle is, in fact, being adopted by many makers, who find that this is the most satisfactory way of getting a high velocity of air over the gasolene jet. Charron, Girardot & Voigt have also introduced a new carburetter, based upon the principle of the Leon Bollée carburetter, which was shown for the first time last year, in which there are two gasolene jets, a large and a small one, so that the former can be closed when the engine is running at low speeds.

In clutches the leather faced type is still generally adopted in a much improved form, and by an arrangement of springs under the leather facing a much more gradual action is given to the clutch, at the same time that it is less liable to slip. Change speed gears have undergone no change, except in very small detail, and even De Dion, Bouton & Cie. have dropped their internally expanding clutch and have returned to the classic sliding gear.

The most remarkable thing about the new cars is that while makers have been able to break away from standard patterns, they have yet succeeded in considerably increasing the efficiency of the engines and of the transmitting gear, in the former case by means of more suitable carburetters and in the latter by employing ball bearings in every part of the vehicle except on the crank shaft, although some firms have even gone to the extent of employing ball bearings on this part of the mechanism.

This rapid survey of the improvements carried out in the new vehicles will show that there is, after all, very little change in general design, and that the only thing done during the last year has been to increase the efficiency of the vehicles by little improvements in detail. The whole interest of the show is, in fact, centred in detail, and there is enough to be seen to keep the automobilist fully employed during the whole time of the exhibition. As there is always a stand at each show specially selected by public opinion as the "best," so on this occasion every one admits that the best stand, so far as appearance of the cars is concerned, is that of the great engineering firm of Delaunay-Belleville, who are for the first time showing cars of remarkably high engineering finish.

The great crowds that have filled the building to-day have rendered impossible the photographing of cars or features of special interest, and to catch the American mail only this general summarization is possible; detailed descriptions must be dealt with later.

R. F. C.

Pitcher Has Pretentious Plans.

The Memphis Automobile Co., of Memphis, Tenn., which has been formed to put on the market cars equipped with the Pilcher compound steam engine, has purchased twenty acres of land near Memphis, has let contracts for a factory and hotel building, and has the finished working model of the new engine ready to turn on steam.

The tract of land bought by the Automobile company is located five miles from Memphis, on the Mullens estate. This land lies along the N. C. & St. L. Railroad, and on it the new company plans to build its factory, homes for the workmen, a small hotel, homes for the officers of the company, and, in fact, to establish a small town.

The main factory building, which will be erected later, will be 50x150 feet, and will have, in addition, two large wings.

The first working model of the new Pilcher engine is finished at the Duke Machine Works, and steam will be put in it in a few days.

Expansion in St. Louis.

St. Louis is rejoicing in the prospect of an addition to its industries in the shape of an automobile plant which will be "the largest in the world." The St. Louis Car Co. is to bring this dream to realization, and to that end it has increased its capital to $500,000. This stock, however, will not be offered in the open market. The Whitaker-Weber tin plant, at No. 5,300 North Second street, has been purchased, and will be remodelled at once. The plans provide for a floor space of 100,000 feet, and 1,500 men will be employed, it is stated. Work will be started in thirty days.

Models of French gasolene cars of 18, 24 and 50 horsepower are to be manufactured, and a smaller and more popular priced machine besides the $3,000 to $8,000 machines of the larger type will also be placed on the market.

How Snow Caused Damage.

A peculiar accident occurred at the Newport, R. I., establishment of the Pope Mfg. Co. last week. The heavy weight of snow which fell in the storm the night before crushed the roof down upon the tops of many automobiles, including one belonging to Oliver H. P. Belmont.

Parts of the roof had to be sawed away to release some of the automobiles. Representatives of the company moved automobiles to stable and barns, and with a force of mechanics set to work to repair the damaged machines.

New Concern Completes Organization.

Stockholders of the newly formed Curtin-Williams Automobile Co., of Columbus, Ohio, have completed their organization by the election of thes officers: President, Thomas E. Curtin; vice-president and superintendent, Roy Williams; secretary-treasurer, Fred Wardlow. The officers named and Charles Wardlow and Dr. Yateman Wardlow will constitute the board of directors. The company decided to open its garage at No. 121 Parsons avenue this week, and the building is now practically completed for its new tenants.

Buffalo Trade Selects Leaders.

C. W. Rose was elected secretary of the Buffalo (N. Y.) Automobile Trade Association last week, succeeding D. H. Lewis, who declined to serve after being re-elected. Lewis was made manager of the approaching showy to be held next March, however. Other officers were elected, as follows: E. R. Thomas, president; J. A. Cramer, vice-president; John J. Gibson, treasurer. The executive committee is composed as follows: E. C. Bull, Jesse B. Eccleston and P. W. Eigner.

White Honors Retiring Manager.

To-day the White Sewing Machine Co., of Cleveland, Ohio, is tendering an informal luncheon at the Hotel Astor, New York, to Paul H. Deming, manager of the New York branch, who retires from that position on January 1. The guests include Dave Hennen Morris, president of the A. C. A.; W. E. Scarritt, H. W. Whipple, James B. Dill, A. T. Post, A. R. Pardington, S. M. Butler, Emerson Brooks and Windsor T. White, representing the company.

'Frisco Hill Climbers Secure a Site.

The Hill-Climbing Auto Manufacturing Co., of San Francisco, have purchased a site on the Nystrom addition for a factory to manufacture automobiles. The officers of the company are: President, P. J. Leharbach; vice-president, A. B. Cameron; secretary, M. Mackowitz; treasurer, G. W. Pollis; attorneys, Frisbie & White.

Greenwood Gets One, Too.

Greenwood, Ind., plumes itself on having secured an automobile factory as an addition to its industries. A committee of citizens signed a contract last week with the Standard Engine & Automobile Co., under the terms of which that concern will locate in Greenwood and keep its factory running for five years. The factory will be 50x250 feet.

The Temptation of Aurora.

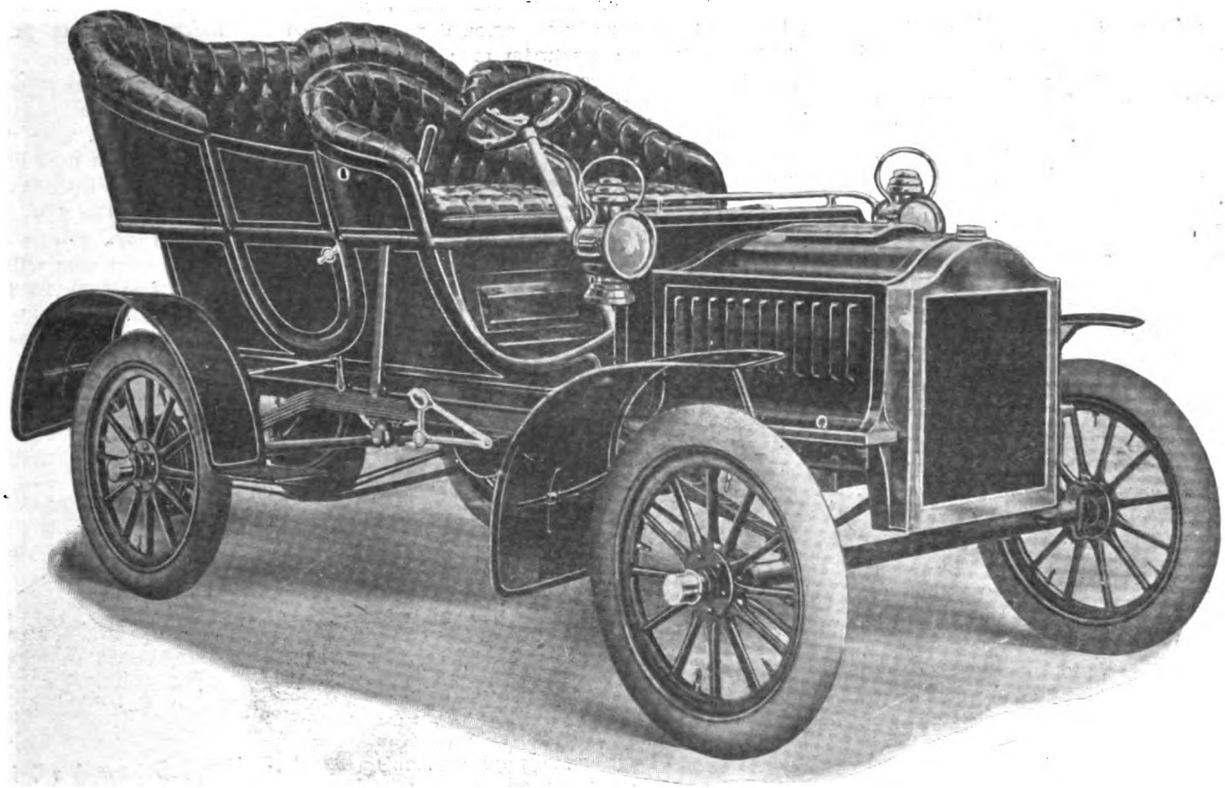
E. G. Struckman, of Bartlett, Ill., and Charles Cotta, of Rockford, Ill., are coquetting with Aurora, Ill., with a view of locating an automobile factory in the latter place. They state that they mean business, but decline to give out any details of the negotiations.

Tray Plate Battery Changes Owners.

The Tray Plate Battery Co., Binghamton, N. Y., have purchased the patents, equipment, etc., of the Smith Storage Battery Co., and will continue the manufacture of the patented Tray Plate storage batteries. They will likewise produce a cell type battery for motor vehicle use.

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The Most Recent Creation in Oldsmobiles.



About the Newest Oldsmobile.

Details of the much talked of and long expected double cylinder Olds car have at last been made public. The accompanying illustration gives a good idea of its appearance, and the following description will make its general construction clear.

The car is styled the Oldsmobile touring car. It has the popular side entrance type or body, with a 90-inch wheel base and a 55-inch tread. The weight is 2,350 pounds. Upon an angle steel frame is mounted a double opposed cylinder engine, with 5¼x6-inch cylinders, developing 20 horsepower at a normal speed of 750 r. p. m. At this speed the car will attain a speed of twenty-three or twenty-five miles an hour; the range of speed on the high gear is six to forty miles an hour. Memchanically operated valves are used, fitted above the cylinders and out of the dust. A 2-inch crank shaft is used, with a drop forged steel connecting rod; four piston rings are fitted. The front axle has ball and the rear roller bearings. The wheels are 30-inch, with 3½-inch front and 4-inch rear.

The transmission is of the planetary type, with two speeds forward and reverse, steel and bronze gears, encased in oil, being used. A radius rod is employed to adjust the chain. The well known Olds side springs support the body. Brakes on the transmission and hubs are fitted, all being operated by foot levers. The cooling system consists of a honeycomb radiator on front of frame. The radiator surface is of large size, and has proven extremely efficient. Circulation is by gear pump. A sight feed lubricator, with tubes running to various bearings, is fitted. Gasolene tank capacity, 15 gallons; water tank capacity, 8 gallons, both tanks being located under a hood.

Disappearing Salesman Run to Earth.

The Standard Automobile Co., of Pittsburg has got on the tracks of N. J. Farrend, who is accused of having stolen an automobile from them. Farrend appears to have made a business of purloining automobiles, for he was arrested in Lima, Ohio, charged with a similar crime. Singularly enough, Farrend's wife was arrested at Topeka, Kan., on the same day that the Lima authorities apprehended Farrend. Mrs. Farrend, who is said to be the daughter of a prominent man in Geneva, Ohio, denied all knowledge of the crime with which she is charged.

The Standard company charges that about a year ago Farrend was sent with two automobiles to Lima to sell. He made the sales, which amounted to about $2,000, and is said to have kept the money. He disappeared, and the case was turned over to a local detective agency which failed to get any trace of the man.

Requisition papers will be sent to Ohio for Farrend, and if the police of that city do not prosecute him he will be brought to Pittsburg for trial.

"That 'one lunger' over there," was the language the workman used as he pointed to a small car in the corner of the garage. It required inquiry to discover that "one lunger" meant a single cylinder car. In some parts of the East the term is coming into use to describe all such cars.

Carousing Chauffeur Haled to Court.

Will Halliburtan, a discharged employe of the Anderson Automobile Company, Nashville, Tenn., gave the police of that city a lively time last week and incidentally landed himself in jail, charged with housebreaking, larceny and with being drunk and destroying property. In the housebreaking cases W. T. Anderson is the prosecutor, while Goodloe Lindsley is prosecuting the larceny cases.

Lindsley has been accustomed to keep his car at the Anderson Automobile Company. Halliburtan was formerly an employe of the company, but had a key to the shops and, with a companion, entered and secured the machine. The men, it is said, had been drinking and lost control of the machine on Union street. It turned and crashed into the glass front of Marshall & Bruce. The glass was shattered and the machine was badly damaged. The machine was valued at $2,500 and sustained damages of about $200. The wheels and a fine headlight were broken. Neither of the men was injured.

Will Not Consider Defects Unavoidable.

Owners as well as drivers of automobiles are to be held to a strict accountability for accidents under a bill introduced in the German Reichstag. Under its provisions both are made responsible for injury to persons or property by their cars. Responsibility can only be avoided by proving that the accident was due to unavoidable circumstances or to the fault of the person injured. However, it will not be regarded as an unavoidable contingency if the accident is attributable to inferior machinery or to a defect therein.

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Breakages of Axles.

Carriage axles in case of accident bend, but very seldom break; they break only under a very severe shock. Continued shocks, successive vibratory action, overstraining and improper construction may affect the quality of the material, but usually the material used is of the very best and is calculated to resist shocks and vibrations, overstrains and overloading. Improper construction will wear them out sooner, but if the material is of the best they will not break if the size of the axles is in conformity with the weight they are calculated to carry.

Wagon axles break, and break very often. The causes are that the material on common wagon axles is not of the best. The vibration is such that from the constant use of wagons the vibration affects the inferior iron and the axles generally break on the round part in front of the collar, which is generally due to crystallization.

If the iron or steel is properly prepared for welding and properly welded, there is no reason why a fracture should occur at the point of welding sooner than at any other point. Fractures very seldom occur at the weld where a thorough union has been effected. If they do occur, they are usually near the weld, and which is solely due to a wasting of the metal at that point while generating the necessary heat for welding. Fractures occur in such places where there is most strain, and at the weakest point, if there is a weld or not.

The theory is that iron breaks more readily at a weld than at any other place, but smiths of forty years' experience in the carriage and wagon shops deny it. Experienced smiths all agree that if the weld is perfect it will not break at the weld, excepting when overstrained, and if the material is of the very best it will bend and not break.

About Irreversible Steering.

By many people the term "irreversible steering," a feature claimed for almost all cars, is only vaguely understood. It is nothing more or less than a worm and segment operated lever in place of the direct steering formerly used on steam runabouts and most other lever steered cars.

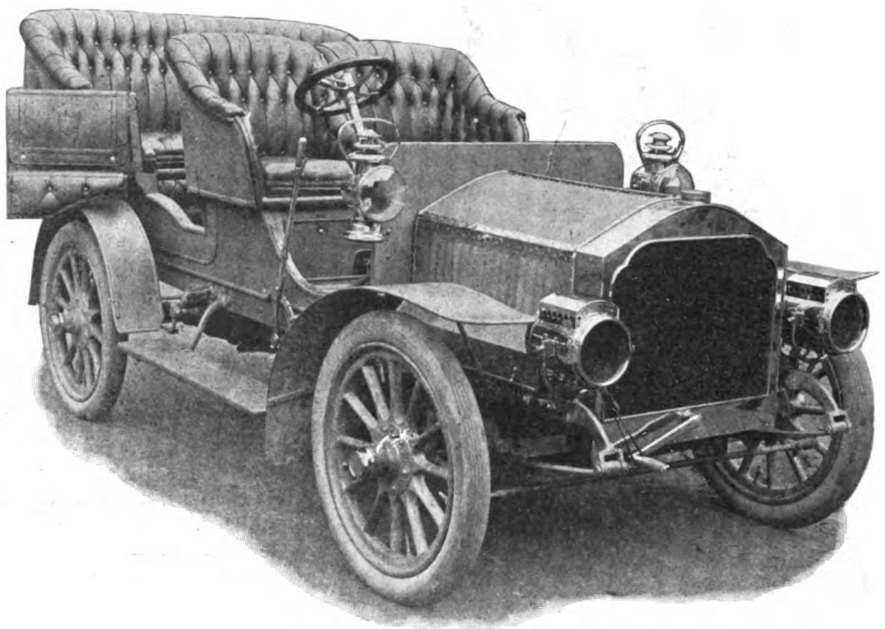
Irreversible steering is applied to the form of steering which is so geared that if the front wheels strike a brick on the road they are not deflected and do not transmit the shock to the steering wheel. To test for one's self whether the steering be really irreversible is a simple matter. The front wheels should be jacked up off the ground, and if the wheels can be moved in any direction by grasping hold of them and pushing them, then the steering cannot be claimed to be irreversible.

To have the irreversible quality, it is necessary to have the lever, which is operated by the worm segment, very short, and this necessitates a complete revolution of the steering wheel before the front road wheels are half locked or turned.

In practice, it is found desirable to sacrifice some of the "irreversibility" of the steering to the handiness of having a steering wheel to which the front wheels quickly respond.

Reconstruction of the Pope-Hartford.

The Pope-Hartford of 1905 is one of the cars that leave no resemblance to the vehicle that bore that title during the current year. As the accompanying illustration bears witness, it has been entirely remodelled, and passes from the single cylinder to the double opposed class. The construction of the engine is such that the various internal bearings are easily accessible for adjustment. All gears run inside the case, and are properly lubricated by splash. The wrist pin bearing of the pistons is of the trunnion type, made hollow and ground to fit. The bolt that locks the connecting rod to the wrist pin fits in a groove which makes it impossible for the pin to ever score the cylinder sides. This construction provides what the Pope Mfg. Co. say mechanical engineers agree is the very best form of bearing.



THE REMODELED POPE-HARTFORD.

The car, which has a side entrance tonneau, is fitted with double brakes, wheel steer and jump spark ignition. The control is by spark and throttle levers, placed conveniently on top of the steering wheel post. There are three speeds forward and one reverse. Between the engine and the transmission gear case there is a compensating joint, which will take care of any twists which might tend to throw these two parts out of alignment. The power is transmitted through this to the gears in the transmission case, and then to the rear axle through a propeller shaft.

First Test in the Snow.

The Berkshire Automobile Co., of Pittsfield, Mass., turned out its first touring car last week, and at once gave it a severe test. It was driven through six inches of snow to West Pittsfield and return, and showed up in excellent fashion.

Buck Building a Big Garage.

Davenport, Iowa, is to have a pretentious garage and salesroom. On the corner of Fourth and Ripley streets Patrick Walsh will erect a four story building, fronting 150 feet on Fourth street and 120 feet on Ripley. The three upper stories will consist of twenty-four roomy flats, with all the latest improvements. The first floor and basement will be occupied by the Buck Auto, Carriage and Implement Co. The first floor is to be divided into salesroom, garage and auto repair station. The salesroom will be 150 feet front on Fourth street by 80 feet deep on Ripley. The automobile garage will have a 40 foot front on Ripley, running 150 feet east, and the east fifty feet will be occupied by the repair shop.

The basement, 150x120x10 feet in the clear will be constructed of solid concrete walls and floor. With the exception of a portion of the west end, which will contain the living rooms of the building and the steam plant, the basement will be used as a stock and storage room.

The floor space occupied by the Buck Auto, Carriage and Implement Co. will be 32,500 feet, four times that of their present place of business.

Locks and Keys for Side Doors.

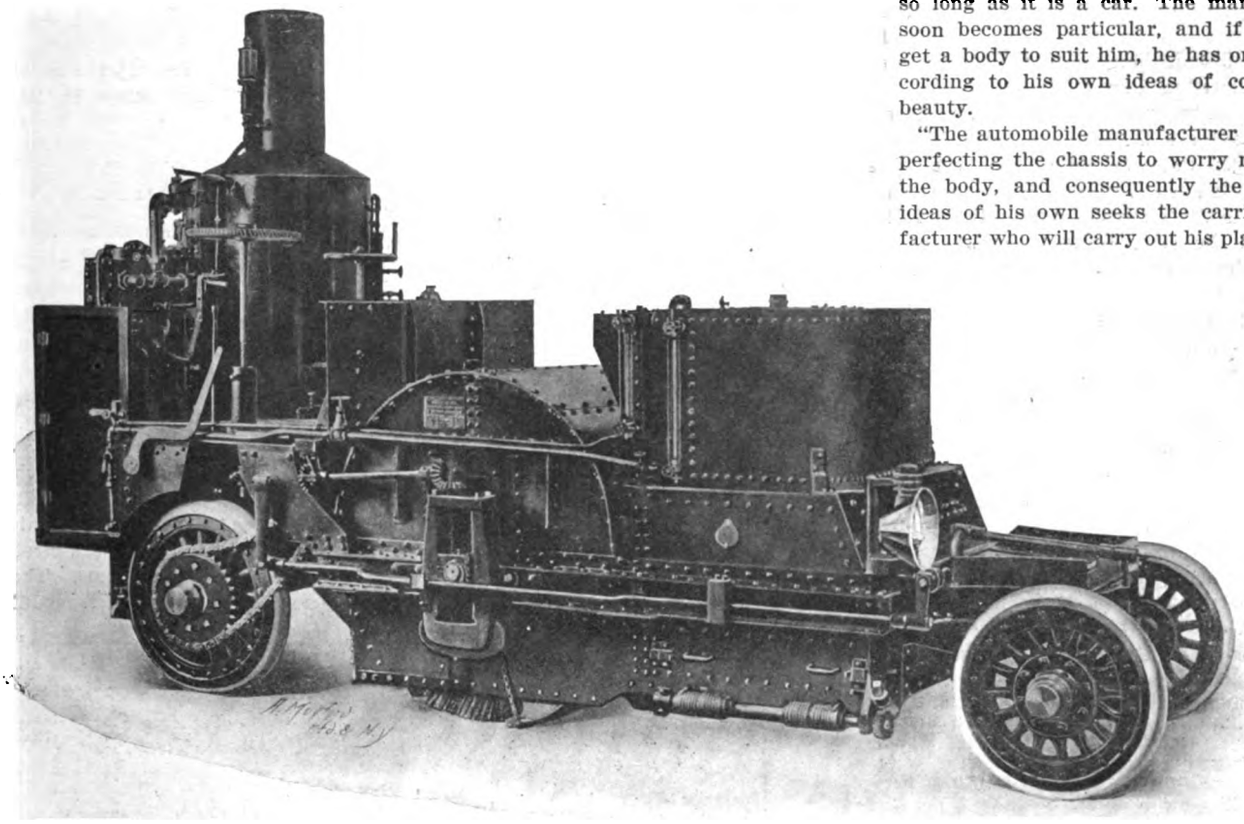
One of the little things worth considering is the equipment of side doors with locks and keys. Several owners of closed cars have had the work done at their own expense, and the idea is so good that there is no reason why it should not be quite generally adopted. It is a check not only to the "borrowing" practices of chauffeurs, but is also a safeguard when for any reason the car is left unattended out of doors.

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TO CLEAN THE STREETS

Hartford Offers a Notable Production for the Purpose that Bristles With Ingenuity.

There is promise that street sweeping will soon be robbed of its attendant nuisances. The Hartford automobile street sweeping machine, made by the Hartford Motor Machine Co., of Hartford, Conn., and shown by the accompanying illustration, is the sign of promise.



THE HARTFORD AUTOMOBILE STREET SWEEPING MACHINE.

Its makers assert without reserve that it will traverse any paved street at the rate of four miles an hour, and remove all dirt and dust from its pathway without the emission of smoke, dust or odor; that it gathers all the dust but sends none into the atmosphere. It does its work without having to wet the pavement, leaving it absolutely clean and dry. The dust is dampened as it is taken up by the rotary brush, upon which a current of hot steam is constantly directed, and is thus prevented from passing into the outer air.

A remarkable feature of the machine is that it takes up all the finest dust and retains it, and also all solid matter as large and as heavy as a brick. All dirt and refuse is thrown as gathered by the broom directly into a dirt box large enough to contain two ordinary cartloads. This box is unloaded at the curb, and it may be completely emptied almost instantly. The mechanism by which this process is effected is extremely simple, as is every part of the machine.

Economy of operation, not less than sanitary thoroughness is claimed for this Hartford machine. With an eight-foot sweeper its makers place the cost of operation at $1 per hour of 18,000 square yards of surface, whether asphalt, wood, brick or stone. With a wider brush the relative rate is, of course, greater.

The machine is of steel construction, 16 feet in length, and weighing about 8,000 pounds. It is steered by a wheel like any automobile.

A water-tube boiler and engine located at the rear of the machine furnish the power for moving the machine and for operating the rotary broom. The engine is wholly incased, no moving parts being exposed. Steam is essential in the operation of the Hartford machine, not only as a source of power, but for the complete suppression of the dust, which is one of its features. Oil is used for fuel, and a supply of oil and water sufficient for five hours' work may be taken on at one time. Solid rubber endless tires of the largest dimensions on artillery wheels protect the mechanism of the sweeper from jolting, and obviate all noise in its movement through the streets. Roller bearing hubs in the wheels which require oiling but once an entire season, are also employed.

Carriage Makers Become Interested.

Although carriage builders originally scoffed at the motor vehicle, and thus lost the opportunity to become a factor in its manufacture, they are unwilling to let it slip through their hands entirely. Thus L. E. Burr, secretary of C. P. Kimball & Co., Chicago, in speaking of the automobile, says:

"The day is close at hand when the carriage maker and automobile manufacturer must combine, as in France, and make the automobile together. The automobile manufacturer here is like every Yankee. He wants to get it all. The first car a man buys gets but little notice as to the body—anything so long as it is a car. The man, however, soon becomes particular, and if he cannot get a body to suit him, he has one built according to his own ideas of comfort and beauty.

"The automobile manufacturer is too busy perfecting the chassis to worry much about the body, and consequently the man with ideas of his own seeks the carriage manufacturer who will carry out his plans. Eventually the chassis will be made by the auto manufacturer and the body be left to the carriage maker."

More Bodies in Sight.

By the completion of an addition to their plant the Pontiac Body Co., of Pontiac, Mich., have almost doubled their capacity. This will enable them to relieve the congestion caused by the rush of orders, and which has caused the company considerable annoyance. The new building is 60x100 feet in size, and is constructed of cement block. It is equipped with steam heat and electric lights, and is modern in every detail. A feature is a wide strip of cement bottom, which runs through the centre the entire length of the building, the wood floors extending both sides. This greatly facilitates the handling of jobs, especially the heavy automobile bodies.

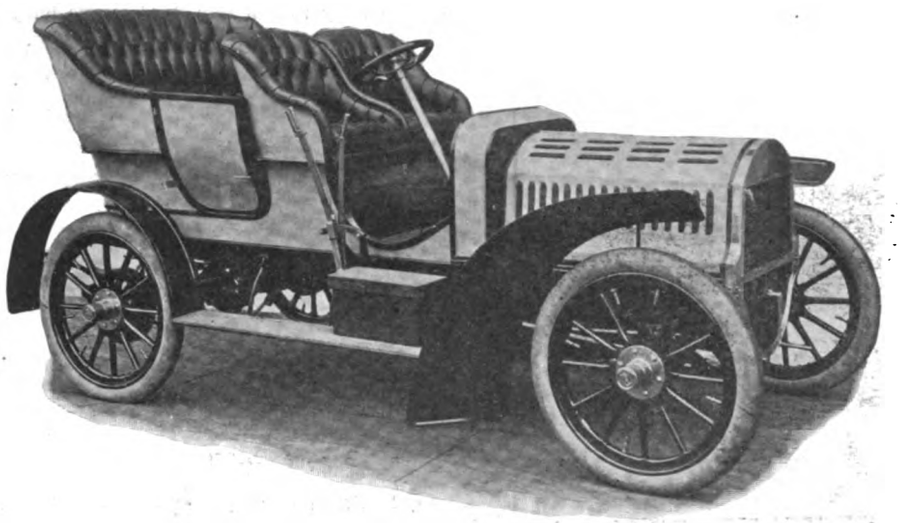
C. J. Bronson, Grand Rapids, Mich., has secured the Winton agency for that city, and will enlarge his business in 1905. One or more other makes will probably be added to his line.

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Lear Makers Free Use of Aluminum.

Launched by its makers, the Oscar Lear Automobile Co., of Columbus, Ohio, as "a scientific contribution to the cause of air cooling," the Frayer-Miller motor and car, shown by the accompanying illustrations, apparently are entitled to more than passing notice, particularly as the 24 horsepower car weighs but 1,650 pounds.

The motor is a four cylinder, vertical 24 horsepower, each cylinder being surrounded



FRAYER-MILLER 24 H. P. TOURING CAR.

with an aluminum jacket open at the top and bottom, leaving a space around the cylinder through which air is driven from a centrifugal blower geared from the engine shaft. A large bustle pipe, also of aluminum, conveys the air from the blower to the top of the jacket. Innumerable spikes are cast on the outside of the engine cylinders, over which the air is blown at a predetermined rate and volume. The effect is the perfect cooling of the cylinder, doing away absolutely with water jackets, the radiator, water piping, pump, water tank and all danger and annoyances connected therewith. Air can be supplied by this method to whatever extent and degree necessary, i. e., it is within controllable limits. The motor remains cool with car standing still on the low gear.

The extensive use of aluminum, the saving effected by the substitution of light aluminum jackets for the heavy cast iron jackets used for water circulation, the elimination of the heavy radiator with its load of water and other savings, makes it possible to produce this car at 1,650 pounds—the lightest weight for 24 horsepower ever heard of. The effect of this on speed and power can be realized, to say nothing of the saving on tires and in amount of fuel used.

The blower is driven by means of spring cushion gears to guard against shocks such as would come from the quick starting of the motor with the spark or other similar causes. The blower is geared four times as fast as the engine. The starting crank is on the blower shaft, making the motor extremely easy to crank over. The blast wheel is made of aluminum throughout, and the blower casting is of the same material. The blower shaft is run on a Babbit bearing, supplied with oil direct from the force of the feed lubricator.

The carbureter is the float feed type, the gas spray nozzle being of the single opening kind, the hot air being drawn from underneath the air jackets.

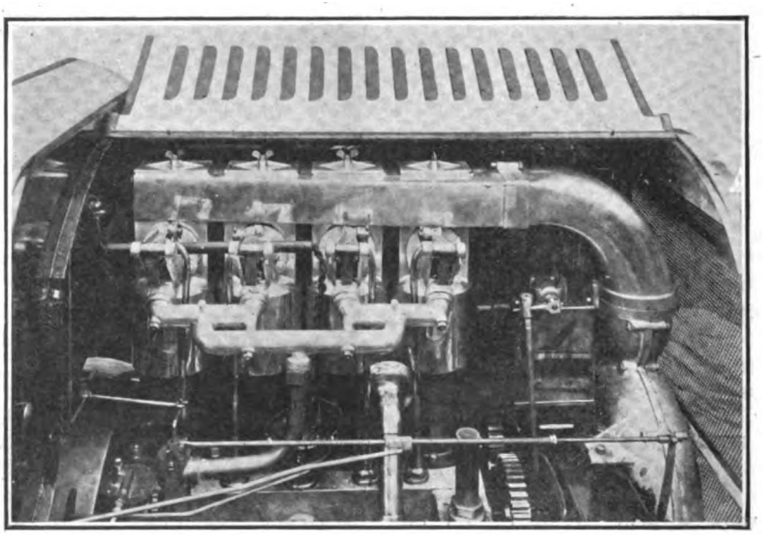
The steering gear is worm and segment type, the worm being quadruple threaded, half-inch pitch, both made of soft steel and case hardened. The steering gear housing is made of steel, bolted rigidly to the sub-frame of the machine.

The transmission case is cast aluminum in two halves. All bearings are of the best semi-babbited bronze type already described. Three speeds forward and one reverse are provided by single lever shift.

Universal joints are self-lubricating. The cardinal cross is made of large diameter, in the centre of which is a large cavity, in which is placed wool waste saturated with heavy oil.

Three point spring suspension is used. The cross spring in front being 2½-inch wide, six leaves, the rear springs being of semi-platform type, 2-inches wide, six leaves. All springs are composed of very thin leaves. The effect of the platform spring and this form of spring suspension is that no matter how light or heavy the load, the maximum amount of comfort is secured. The rear springs are secured by open shackles to prevent the reaction movement as much as possible.

The muffler is of the dash pot type, with drum 6 inches in diameter and 30 inches long. The shell is made of sheet metal 1-16-inch thick; heads are made of steel castings, the muffler being extremely quiet and with no back pressure. The exhaust pipe is 2 inches, with 1-16-inch wall.



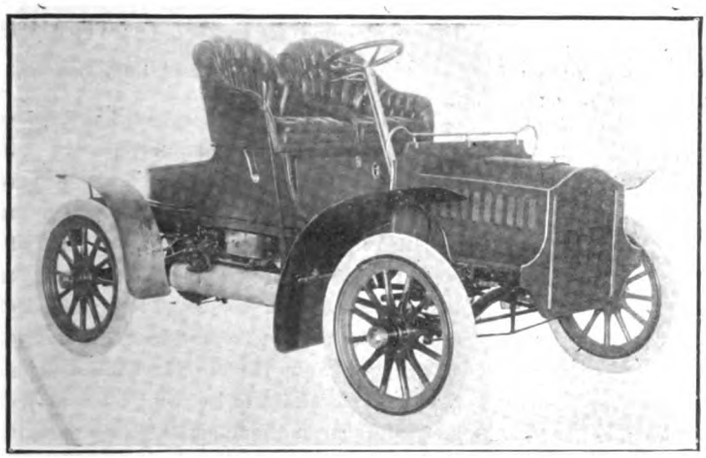
FRAYER-MILLER AIR COOLED MOTOR.

One More Aluminum Alloy.

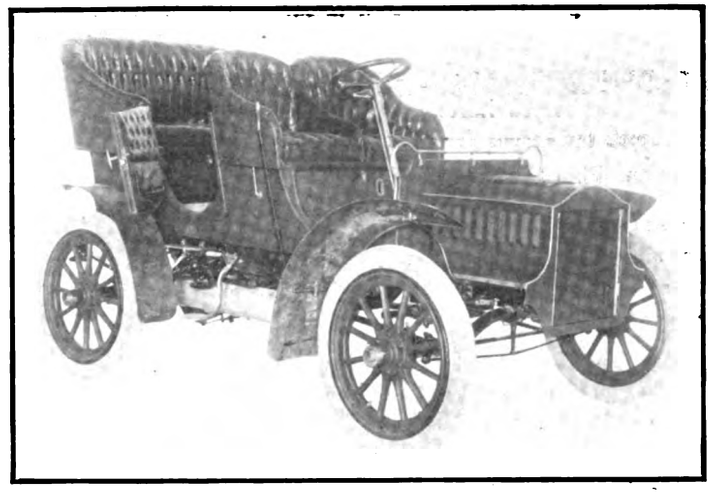
Zinalium is the name of a new aluminium alloy, which has as main substance aluminum, with additions of small quantities of magnesium and zinc. The specific weight of the alloy is given by the technical testing station as 2.6—2.75. The alloy is harder and much more useful for making into sheets and wire than ordinary aluminum. Sheet metal made from the alloy has a draught tenacity of 25—35 kilograms per square millimetre, or twice that of the ordinary alumium. Wire made from the alloy has been stretched with a power of 30—37 kilograms. The zinalium can be filed, planed and forged like steel. The alloy is 10 to 12½ per cent cheaper than ordinary aluminum, and equally impervious to chemical influences; it has at the same time a smaller resistance against an electric current. The material is considered as of special value for the motor industry, and it is said has been largely adopted by leading German concerns.

Work will shortly be started on a new building for Githens Bros., Chicago. It will be twice the size of the present building at No. 1,412-14 Michigan avenue, but will be erected on the same ground.

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CADILLAC RUNABOUT, MODEL E, $750



CADILLAC TOURING CAR, MODEL F, $950.

While the veil of secrecy regarding the details of the new four vertical cylinder Cadillac still screens it from view, some of the principal specifications have come to light. The engine is rated at 28—30 horsepower, has planetary gearing and will list at $2,800. A flywheel clutch is employed in conection with the gearing, and the three speeds forward and reverse are operated by a single lever.

Exclusive of this, the leading model, the 1905 Cadillac line will consist of the Model B touring car, a Model E runabout, a Model F touring car and a Model F delivery wagon. All of these cars are driven by the famous Cadillac single cylinder horizontal motor, rated at 8¼ horsepower, but developing 10 horsepower.

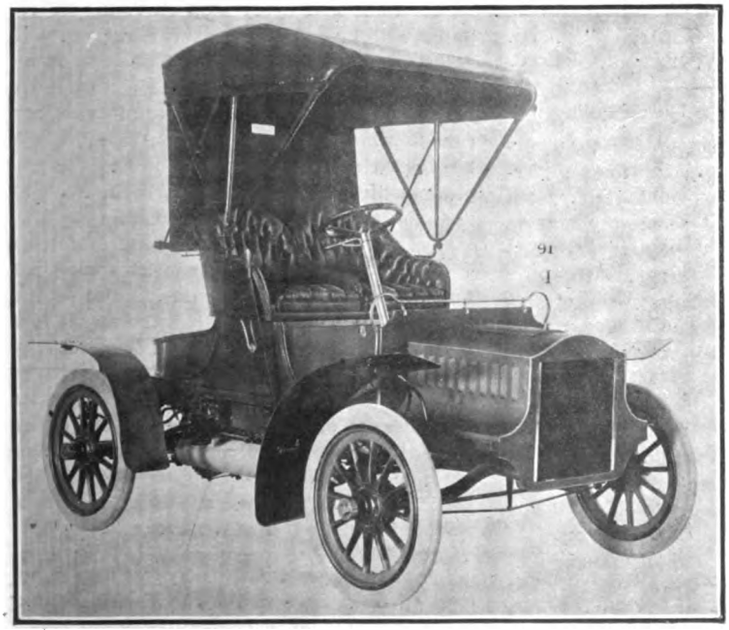
In the Model F the Detroit concern has a taking looking car, with double side door entrance, 18 inches wide, and individual front seats. A well designed bonnet adorns the front of the car, and 30-inch wheels and 3½-inch tires and a 76-inch wheel base insure smooth running. The front axles are ball and the rear ones roller bearing, while the tread is 56½ inches standard, with an option on a 61-inch. The running gear is finished in primrose. The list price is $950. The Model F is also made as a delivery wagon, the chassis being almost identical with that of the touring model. The front axles of the former are of a pressed steel pattern. The price is the same, $950. The weight is 1,400 pounds, and the capacity 400 to 600 pounds. The inside dimensions of the body are: Length, 42 inches; width, 40 inches, and height, 50 inches.

The 1905 runabout is styled the Model E, made with a top, at $800, and not convertible at $750. Both styles are fitted with 28-inch wheels and 3-inch tires. The wheel base is 74 inches, with a 56½-inch tread (61-inch optional), and the weight is 1,100 pounds. Individual seats, trimmed in hand buffed black leather are used. With rubber top the price is $780.

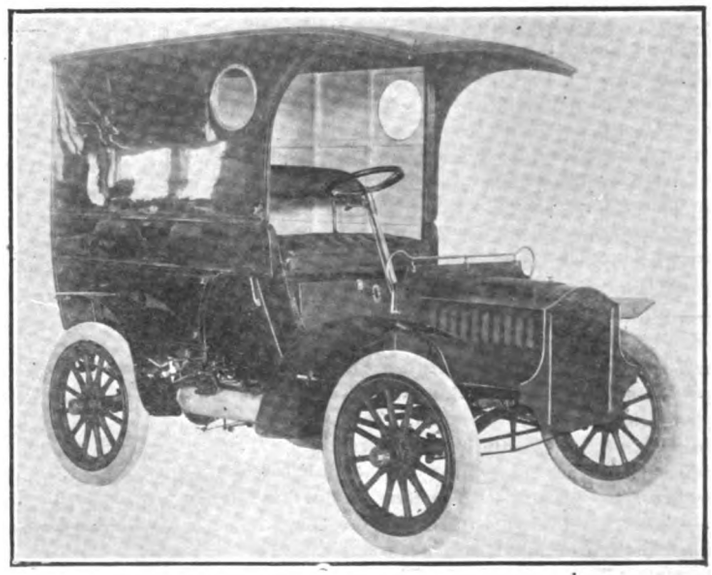
The Model B is made with a detachable tonneau, and lists at $900. The wheel base is 76 inches and the tread 56½ inches, although a 61-inch tread will be furnished if desired. The wheel are 30 inches, with 3-inch tires, and the car weighs 1,450 pounds.

The standard tire equipment is the Perfected Dunlop, but any standard clincher tire will be furnished if desired.

Platinum of atomic weight 195, specific gravity 21.5, fusing point 1750 degrees, Cent., the most malleable metal known next to gold and silver, resists oxidation at high temperature, and is unaffected by acids. The world's production ranges annually between 160,000 and 170,000 troy ounces, supplied chiefly from Russia, and Colombia, South America. Owing to the war in the Far East the price has advanced so much for ingot platinum at New York that it is now nearly the valuation of gold, and about thirty-four times that of silver.



MODEL E RUNABOUT, WITH TOP, $800.



CADILLAC DELIVERY WAGON, $950.

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OLDFIELD IN LOS ANGELES

Again Upsets the Record Table and on a Track that Played Havoc with Tires.

Los Angeles, Cal., Dec. 21.—Following his record-breaking exploits at Fresno on December 13, Barney Oldfield came here last week and performed a few gyrations for our benefit. He was scheduled to race against Frank Kulick and Bert Fuller on Friday. Kulick was to drive the Ford "skeleton," while Fuller was slated to pilot the famous old "999." The Ford was delayed in transit and did not arrive here until late Saturday night. The "999" disappointed everyone, as has frequently been the case in recent months, and did not get here until Saturday, while Fuller, its driver, remained at his home in Denver. The "999" is still at the freight station here.

A "quadrangular motor derby" was accordingly arranged for Friday, with Oldfield, Kulick, Frank A. Garbutt, of this city, and Charles Burman, Oldfield's mecanicien, as competitors. Oldfield won from Burman in the first heat of five miles, one of Burman's tires giving out in the first mile. Oldfield made one mile in 54 seconds, establishing a new record for the track. Oldfield and Garbutt met in the second heat at three miles, Oldfield winning by a small margin. Both drivers kept on for two more miles, Garbutt leading at the end of the fifth mile. Garbutt in his Stewart-Garbutt car, Burman with a 24 horse-power stripped Peerless touring car and Oldfield in the "Green Dragon" made some record trials, but the flinty surface of the track wore the tires out quickly and prevented fast time.

The feature of Saturday's racing was the three-mile event between Garbutt and Burman. They kept together all of the way and Garbutt won in 3 minutes 12 seconds by a narrow margin. It was the most exciting race ever witnessed here. Bert Dingley, in a Pope-Toledo, won the five-mile handicap from Burman in 6 minutes 25 seconds. He had a handicap of three minutes. Burman, whose time for the five miles was 5:17, made one mile in one minute flat. Oldfield tried for the nine-mile record of 8:17, made by Charles Basle, at Providence in September last, but his time was 8 minutes 22 2-5 seconds, owing to trouble with his tires.

The absence of Kulick's racer caused the remainder of the programme to be postponed until Monday, then Tuesday, and the events were finally run off to-day. Kulick could not get the Ford running very well to-day and wore out a set of tires in four miles. He put on a new set, and they were cut badly after going a few miles. Oldfield fitted a new set of tires on the "Green Dragon" and worked on his engine for an hour before trying for the nine-mile record again. He succeeded in taking 13 seconds off Charles Basle's time of 8 minutes 17 seconds. His fastest mile was made in 53 seconds, and he made new records for three miles, and from five to nine miles inclusive. The old and new records from two to nine miles are as follows, Oldfield having held all of them except that for nine miles:

Distance.	Old Record.	Oldfield's Time.
2	1:46	1:46 2-5
3	2:41	2:39 4-5
4	3:33 1-5	3:35
5	4:30	4:29
6	5:25 1-5	5:22 2-5
7	6:18 1-5	6:15 4-5
8	7:13 1-5	7:09 1-5
9	8:17	8:04

Oldfield Under Pickens's Wing.

Barney Oldfield may go through Texas under the management of W. H. Pickens, according to a report from California, where both are at present. Pickens has been acting as advance agent and promoter of the race meets at which Oldfield has been appearing in California since the pilot of the Peerless "Green Dragon" arrived on the Pacific coast. Pickens has been shipping the old "999" around with him and announcing that it would be driven in competition against Oldfield by Bert Fuller, of Denver. Up to date, however, there is no recorded instance that the famous old racing machine has actually appeared against the "Green Dragon." Pickens paid a fine of $250 to the American Automobile Association about a month ago for running the "999" at outlaw meets.

How Jerseyman Enjoy Themselves.

Nearly one hundred members and their friends were present at the first smoker of the New Jersey Automobile and Motor Club, on December 17 last. Corncob pipes, a cold luncheon, singing and monologues were the principal features of the evening's entertainment. There was no set programme, as the smoker was more for the purpose of mutual acquaintance than for enjoying the artists.

The concert was managed by the house committee, which consists of T. H. Dawson, chairman; W. I. Fish, Edward Zusi, Dr. Clement Morris and C. W. Outhout.

Germany Contributes a Queer Ruling.

A German court has just rendered a characteristic decision. It appears that a physician driving in the Grunewald went past a solicitor named Meyerhof so closely and so fast that the lawyer sustained a severe nervous shock. The lawyer summoned the physician. The court declared the shock of seeing the automobile rush by so close could be regarded as a personal injury, and fined the defendant.

Rhode Islanders Make Nominations.

The following ticket has been placed in nomination by the nominating committee of the Rhode Island Automobile Club: For president, Dr. Julian A. Chase; first vice-president, C. Prescott Knight; second vice-president, Darwin Almy; treasurer, Howard D. Wilcox, and secretary, Elliot Flint. The election will be held the first week in January.

FOR THE GLIDDEN TROPHY

Date and Route of First Contest Fixed—Will Replace Endurance Run.

Tuesday, July 11, has been fixed as the date for the start of the first contest for the C. J. Glidden Touring Trophy. The tour will take the place of the annual endurance run of the American Automobile Association. It will start from New York City and continue for two weeks over a course of one thousand miles. The route will be through Stamford, Bridgeport, New Haven, Hartford, Springfield and Worcester to Boston. One day will be spent in a run of one hundred miles around the latter city. Then the tourists will go to the White Mountains, and return to New York City by way of Lowell, Worcester, Lenox, Albany and Poughkeepsie. Two days will be spent in the White Mountains and one in the Berkshires.

These details were settled upon at the first meeting of the committee which has charge of the contest. The meeting was held at the rooms of the Automobile Club of America on Tuesday last. Those present were Harlan W. Whipple, chairman; Dave H. Morris, representing the Automobile Club of America; W. C. Temple, American Automobile Association; W. K. Vanderbilt, jr., Automobile Club of France, and Augustus T. Post, who represented the donor of the trophy. Mr. Glidden is now on his way to the Fiji Islands on his globe girdling tour, and after visiting New Zealand, Tasmania, Australia, Japan and Singapore will come back to this country in time for the start of the contest. He will leave his car at Singapore, and will witness the Bennett Cup race before returning to America.

Each competing car will be credited with a given number of points at the beginning of the tour, and every stop en route for repairs will be penalized at the rate of one point for each minute lost. The cost of repairs will not be counted. The contest is to be decided on stops for repairs and gasolene consumption. The gasolene consumption will be figured on a basis per ton mile. Tire repairs which require stops will not count against competitors. The machine which makes the best combined showing of fewest points lost and least gasolene consumed per ton mile will be declared the winner of the trophy. The runs each day will average less than one hundred miles, and violators of speed laws will be disqualified.

One of the conditions in the deed of gift is that owners of competing cars must either drive their own cars or be passengers during the contest, which is, of course, open to the world. Several entries are expected from England and Continental Europe.

A Berlin paper is authority for the statement that a large motor racing track is to be constructed at Ruhleben, between Charlotenburg and Spandau, Germany.

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OLDFIELD'S WORK AT FRESNO

Details of His Record Breaking Performance, Which Resulted in 36 New Figures.

Later advices from Fresno, Cal., give fuller details than were published in last week's Motor World of Barney Oldfield's "track burning" on December 13, when he made new records from fifteen to fifty miles, but no mention is made of burning gasolene to dry out the track. Oldfield had tried the track the previous day, and had declared it was a good one, though a trifle soft on the turns. The misty weather had caused Oldfield to call the races off in the morning, but when the weather cleared up at noon the track champion declared the races on again. Oldfield now holds all the records from one to fifty miles, except that for nine miles, made by Charles Basle.

It was after 3 o'clock when the first event was run off. This was a four-mile trial by Charles Burman, Oldfield's mecanicien, in a stripped Peerless touring car. He covered the distance in 4:13 7-10 seconds, his fastest mile being the last, which was made in 1:02 1-5. This was gravely announced by Advance Agent Pickens as equalling the best record for lightweight cars, though the record is really 55 seconds, made by Frank Kulick in the Ford "skeleton." It was then announced that Oldfield would try for all of the records up to fifty miles in the Peerless "Green Dragon."

The time for his first mile was 56 2-5 seconds, and he took 56 2-5 seconds for each of the following four circuits. The sixth mile, in 54 1-5 seconds, was the fastest one of the fifty. He did not begin to cut into the record table until the fifteenth mile was reached, but from then on he put up an entirely new set of figures. He cut two seconds off his own time for fifteen miles and 20 2-5 seconds off Kiser's record for twenty-five miles. He was nearly five minutes ahead of Gorndt's thirty-mile time. The "Green Dragon" behaved well until the forty-ninth mile, which was covered in 1:05, the last mile being two seconds faster than the previous one. He lowered Gorndt's fifty-mile record by more than seven minutes, it having stood at 55:42.

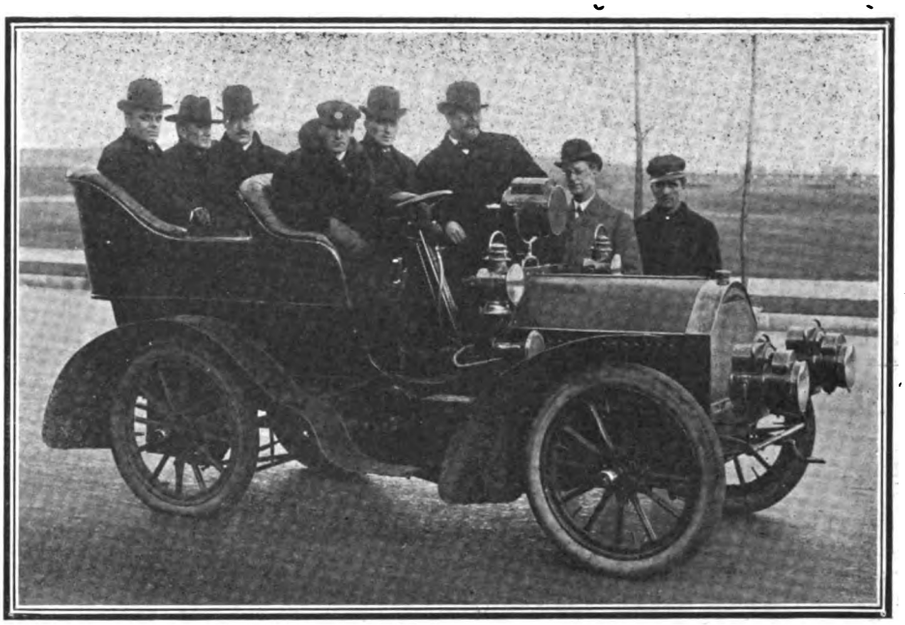
After Oldfield's ride Burman gave another exhibition, but the machine refused to run more than four miles. The fastest intermediate mile was covered in 1:03 2-5. The last event was a motorcycle race, for which Thomas Yuck and Ben Bresee were entered. The latter's machine would not run, and Harry Babcock, a newsboy, rode against Yuck. Babcock received a handicap of half a mile in the five-mile contest, and won it by a quarter of a mile.

OLDFIELD'S TIME.

Distance.	Time.	Distance.	Time.
1	56 2-5	26	24:35 2-5
2	1:51 4-5	27	25:36
3	2:47 1-5	28	26:37 1-5
4	3:42 3-5	29	27:38 4-5
5	4:38	30	28:38 4-5
6	5:32 1-5	31	29:38 4-5
7	6:28 3-5	32	30:38 3-5
8	7:25	33	31:38 3-5
9	8:21 1-5	34	32:37 3-5
10	9:18 3-5	35	33:36 3-5
11	10:15 3-5	36	34:36 3-5
12	11:11 3-5	37	35:35 3-5
13	12:07 3-5	38	36:34
14	13:04 3-5	39	37:33
*15	14:02 3-5	40	38:31 3-5
16	15:01 3-5	41	39:30
17	15:59 3-5	42	40:29
18	16:57 2-5	43	41:29
19	17:55 2-5	44	42:29
20	18:52 4-5	45	43:29
21	19:49 4-5	46	44:28 3-5
22	20:47	47	45:29 3-5
23	21:44	48	46:31 1-5
24	22:41 3-5	49	47:36 1-5
25	23:38 3-5	50	48:39 1-5

*New world's record until the finish.

One of the Americans Who Covets the Bennett Cup.



DR. HAROLD E. THOMAS, OF CHICAGO (AT THE WHEEL), WHO WILL DRIVE A 90 H. P. LOCOMOBILE, NOW BUILDING, IN THE BENNETT CUP RACE OF 1905.

Pardington not to Accept Reappointment.

When the incoming administration of the American Automobile Association assumes the reins of office, it will, in all probability, be called upon to select a new head for the racing board. It is understood that Chairman A. R. Pardington, who has served the association ably and conscientiously in that capacity almost since its inception, will decline to serve another term. The appointment is made by the president, subject to approval by the Board of Governors.

"The King can do no Harm."

A bill has been introduced in the Spanish Senate for the purpose of forcing King Alfonso to desist from driving through the streets of Madrid at a thirty-mile rate of speed. The government, however, acting on the King's request, has refused to pass the bill.

Tinkering with Missouri's Laws.

Three bills which were introduced in the House of Delegates at St. Louis, Mo., on December 16 have the unqualified support of the Automobile Club of St. Louis and the local motorcyclists. The first provides for the identification of automobiles by immovable number plates, placed at the rear of each vehicle, and requires each car to carry a lighted lamp at night which will throw a red light to the rear and a white light upon the number plate. The measure also provides a penalty for duplicate number plates. The second bill places the speed limit at fifteen miles an hour during the day and ten miles an hour at night. The present speed regulation allows eight miles an hour on public thoroughfares and six miles an hour in the park limits.

The third bill makes a radical change in the license fees for motor driven vehicles. At present all are charged $10 a year, even the motor bicycle owners paying that rate. The rates in the proposed ordinance are as follows: Pleasure vehicles, one seat, $3; two seats $5; broughams, three seats, $6; four or more seats, $10. Trucks, delivery wagons or carts, capacity one ton or less, $7; more than one ton, $10. Motor bicycles, $2.

There is also an ordinance pending before the City Council which provides for the examination and registration of chauffeurs. It requires all persons who wish to operate automobiles on the streets of the city to obtain certificates from the inspector of boilers and elevators. A. B. Lambert, president of the local automobile organization, is heartily in favor of the latter measure. He says that the club itself has decided to grant certificates to capable hired chauffeurs, and the members of the club have agreed to employ only chauffeurs who hold certificates.

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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

LIST OF AGENTS.

DOWLING & MAGUIRE, Boston Mass.
R. W. WHIPPLE, Binghamton, N. Y.
H. PAULMAN & CO., Chicago, Ill.
THE GEORGE N. PIERCE CO., Denver, Colo.
STIRLING AUTOMOBILE CO., Detroit, Mich.
N. L. BIEVER, Derby, Conn.
ELMIRA ARMS COMPANY, Elmira, N. Y.
WATERMAN BROS., Fresno, Cal.
EAST COAST AUTOMOBILE CO., Jacksonville, Fla.
J. A. PLACE, Geneva, N. Y.
L. H. JOHNSON, Los Angeles, Cal.
HARROLDS MOTOR CAR CO., New York, N. Y.
THE GEORGE N. PIERCE CO., Oakland, Cal.
WILSON & CO., Ottawa, Canada.
BANKER BROS. CO., Pittsburg, Pa.
H. J. WILLARD, Portland, Maine.
R. V. CONNERAT, Savannah, Ga.
C. P. JOY AUTOMOBILE CO., St. Paul, Minn.
MOBILE CARRIAGE COMPANY, San Francisco, Cal.
STANDARD MOTOR CAR CO., Scranton, Pa.
WESTERN AUTOMOBILE CO., St. Louis, Mo.
M. C. BLACKMAN, Syracuse, N. Y.
MILLER-MUNDY MOTOR CAR COMPANY, Utica, N. Y.
CENTRAL AUTOMOBILE EXCHANGE, Worcester, Mass.

NEW YORK AUTOMOBILE SHOW, Center Aisle, Section F; CHICAGO AUTOMOBILE SHOW, Spaces Nos. 49, 50, 65 and 66.

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CROKER ON FIRE ENGINES.

New York's Chief Points Out the Obstacle to Use of the Self-propelled Machines.

Until some device can be found that will prevent slipping and skidding on ice and snow covered pavements, Chief Edward Croker of the New York Fire Department does not believe the automobile fire engine will prove thoroughly practical. He is, however, a believer in the automobile as an auxiliary, and uses a Columbia touring car as his "chief's wagon" in making his inspection tours and in attending fires where his presence is needed. The car he is using at present was supplied by the city. Croker's previous experience with a small steam carriage that was his own personal property led to the purchase of the larger vehicle.

"The 'self-propellers,'" as Mr. Croker called the automobile fire engine, "are all right so long as they can be run on dry streets," he said when his views were sought, "but they cannot be used over icy streets or over wet wooden and asphalt pavements. One reason is the great weight of the latest patterns of pumping engines, which scale about six tons. If fire engines could be run as slowly as brewery and other heavy trucks are propelled over the streets automobile fire engines would be all right, but, of course, speed is the greatest factor that we seek, only it must be speed with at least a reasonable element of safety.

"While it is often very hard to guide one of the six-ton engines on an icy pavement with three horses pulling it, it can be turned in any direction. If any of the big engines were self-propellers it would be almost impossible to steer it around a sharp corner if it were travelling as fast as a fire engine ought to travel. They have a steam 'self-propeller' up at Boston, but it is used only for second and third alarms, and we cannot afford to have machines in this city that are good only for limited duty. If some way can be found to prevent such heavy machines from slipping on wet or frozen streets I will be one of the first to advocate the use of automobile fire engines. Personally I can get to a fire, especially if it is at any distance, much quicker by using an automobile than I can with a horse and buggy, and accordingly I use an automobile. For such purposes it is the best thing that can be had, but as an 'every day in the year' fire engine, the slipping puts the 'self-propeller' out of our calculations."

A former Bostonian who was told of Chief Croker's remarks about the Boston "self-propeller" said he thought the chief was mistaken. He was of the opinion that the Boston automobile fire engine answered all alarms in its district as regularly as the horse drawn engines. The engine has steel tires, which are provided with soft steel or iron "studs," much like those on non-skidding pneumatic tire covers.

Chief Croker's remarks were brought out in answering questions regarding the probability of a grade of "automobile firemen" being added to his department. According to a daily newspaper, examinations were being held for this alleged new grade, but this is declared to be an error by Chief Croker. He said the examinations referred to were to provide regular drivers for the gasolene touring cars used by himself and Deputy Chief Lally, of Brooklyn. Instead of the examinations being for "automobile firemen," the chief said the Civil Service Commission had announced examinations for "automobile enginemen," the latter term being used in place of the usual term "chauffeur." As the salary provided for the "automobile enginemen" is but $1,200 a year, it has been rather a difficult matter to get men, as the drivers of the chiefs' cars are required to be on duty all of the time.

Made Ready for Tire Trouble.

To meet a demand that has arisen the Hartford Rubber Works Co. have just placed on



the market the tire repair outfit, shown by the accompanying illustration, which is so complete and in such compact and convenient form that it can scarcely fail of ready sale.

This repair outfit includes a B. & S. style of wrench with combination screwdriver, soapstone, cement, a handy tool for roughing the surface of inner tubes, patches, patching cement, wide tape, tire detachers and special pigskin sectional cover to strengthen the tire at the point of repair; friction duck, patching rubber, parts for valves, and in fact everything that is used in making repairs on double tube tires, either in the garage or on the road, all being neatly placed in compartments to prevent general mix-up of contents.

To Hold Auction Monthly.

W. D. Grand, of the American Horse Exchange, Broadway and Fiftieth street, New York, who has conducted an automobile auction sale annually, has found that the idea has met such favor that henceforth he will hold such auctions monthly. The next sale has been set for December 30. Nearly one hundred cars have been already entered. Mr. Grand has arranged to obtain the use of the horse ring, which will permit of actual demonstrations.

SUBSTITUTES FOR RAILWAYS

Ceylon Adopts Automobiles and Success of Experiment Will Lead to Extended Use.

The authorities of Ceylon have finally decided, after considerable cogitation, to establish an automobile service on that island, to carry the mails and passengers for a period of ten years, beginning July 1, 1905, and sealed bids have been advertised for. There will be five routes, the longest of which is from Badulla to Batticaloa, covering a distance of 105 miles, and the automobiles are to make one trip each way per day. An almost equally long trip will be that from Matale to Trincomalee, ninety-seven miles, while the other road on which one trip a day will be made is from Chilaw to Puttalam, thirty-two miles. On the shorter lines—Bandarawela to Badla (18 miles), and Colombo to Chilaw (50 miles) two daily trips will be made.

The Ceylon automobile service is primarily designed to carry the government mails, but will also be adapted to passenger traffic, and, it is presumed, carry light parcels and luggage as well. The automobile service will fill one of Ceylon's long felt wants. Railway communication is practically non-existent in that country, and the towns are situated so far apart that it is extremely difficult, if not well nigh impossible, under present conditions, to traverse the island.

Unless the automobiles are powerful hill climbers trouble is likely to be encountered on the proposed route between Badulla and Bandarawela. The road begins at a point two thousand feet above the sea level, and ascends to four thousand feet. Many of the hills have a grade of 12 to 30 per cent, and to climb this, it would seem, will be no easy task for a heavy automobile loaded with passengers and baggage.

If the automobile service proves a success in Ceylon there is a bare possibility that a similar service will be adopted in India. There are many large tracts in India which are just as badly served by railways as in Ceylon, and in which automobile communication would be equally as beneficial as in the island.

Germany's School for Chauffeurs.

Another school for chauffeurs has been started, this time in Germany by the Automobile Union. The stipulations are that the pupils "must be young, in sound health and possess thoroughly perfect eyesight." In the lessons they will be taught repairing the mechanism, taking to pieces the different parts of the cars, and afterward reassembling them. They will be also instructed in "geography, motor law, the customs regulations and skilful driving."

The last coaching season was the most disappointing Paris ever knew. The popularity of the automobile is assigned as the cause of the wane of coaching.

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The only dealer who will find fault with the Orient Cars, this season, will be the dealer who hasn't got them.

It is too soon to say that any motor-car has been produced yet that is faultless. But the 1905 Orients will be nearer faultless than any cars that have been made.

There is no exaggeration in that—there is simply a reason for it.

The 1905 Orients are the product of the combined automobile brains of a number of the best men in the business.

These cars have 4-cylinder, vertical, tandem motors, positive air-cooled by an air-blast from a powerful 4-bladed fan and a specially designed system of flanges.

The motors also have Mr. Gaylor's new mechanical valve, which makes them run absolutely without noise.

They will develop *continuously* higher power for the weight of the cars than any other motor you ever saw.

They climbed the steepest hills in Massachusetts last summer, carrying five people (1000 lbs.) and without a single case of over-heated cylinder.

SPECIFICATIONS.

18-20 H. P. Orient. Model G. Price, $2,000.

Body: Tonneau Side Entrance.
Frame: Pressed steel, tapering pattern.
Springs: 40 inch front; 45 inch rear.
Color: Body and Hood Olive Green; Gear Red; Black striping.
Hood: Mercedes type; Aluminum top; Removable.
Seating Capacity: Five persons.
Total Weight: 1650 lbs.
Wheel Base: 96 inches.
Wheel Gauge: Standard 56 inches.
Wheel Diameter: 32 inches.
Axles: 1¼ inch diameter; Toughened steel.
Tires: 3½ inch International G. & J. Pattern.
Steering: Brass plated steel upright; wood rim wheel.
Brakes: Band and Emergency.
Gasoline Capacity: 10 gallons.
Motor: 4 cylinder, vertical, tandem; Positive Air-cooled.
Cylinders: 4 inch bore; 4¼ inch stroke.
Crank Shaft: 4-throw; 1¼ inches in diameter; 5 extra long bearings.
Cooling: Powerful, 4-bladed, ball bearing fan.
Fly Wheel: 16 inches in diameter; weight, 60 lbs.
Clutch: Cone pattern; Internal grip.
Transmission: Sliding gear pattern in aluminum case; ball bearing.
Ignition: Two four-cell batteries.
Speeds: 3 forward and reverse.
Commutator: Latest French Pattern.
Vibrator: 4-coil; best type.

14-16 H. P. Orient. Model F. Price, $1.500.

Body: Tonneau, Entrance, swinging front seat.
Frame: Pressed steel, tapering pattern.
Springs: 34 inch front; 42 inch rear.
Color: Same as 18-20 H. P. Cars.
Hood: Mercedes Type; Aluminum top; Removable.
Seating Capacity: Five persons.
Total Weight: 1450 lbs.
Weight without Tonneau: 1350 lbs.
Wheel Base: 82 inches.
Wheel Gauge: Standard 56 inches.
Wheel Diameter: 30 inches.
Axles: 1⅛ inch diameter; Toughened steel.
Tires: 3½ inch International G. & J. Pattern.
Steering: Brass plated steel upright; wood rim wheel.
Brakes: Band and Emergency.
Gasoline Capacity: 7 gallons.
Motor: 4 cylinder, vertical, tandem; Positive Air-cooled.
Cylinders: 3¼ inch bore; 4¼ inch stroke.
Crank Shaft: 4 throw; 1⅛ inch diameter; 5 extra long bearings.
Cooling: Powerful 4-bladed, ball bearing fan.
Fly Wheel: 16 inches in diameter; weigh: 60 lbs.
Clutch: Cone pattern; Internal Grip.
Ignition: Two 4-cell batteries.
Transmission: Sliding Gear Pattern; ball bearing.
Speeds:3 forward and reverse (one-lever).
Commutator: Latest French pattern.
Vibrator: 4 coil; best type.

WALTHAM MANUFACTURING COMPANY,

Sales Office for New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia and Florida,
44 Broad St., New York City.

Factory and General Sales Offices,
Waltham, Mass.

THIS MEANS MONEY.

We are going to push the Orient line in 1895 as no line was ever pushed before.

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WHITLOCK COOLERS

For 1905.



The Leading Automobile Builders have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of coolis worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT.

The Week's Patents.

777,219. Elevated Platform or Support for Motor Vehicles, etc. William C. Owen, Ealing, England. Filed March 4, 1904. Serial No. 196,627. (No model.)

Claim.—1. A platform for motor and other road vehicles consisting of two supporting parts a a, held apart at their front and rear ends by suitable bars or rods, and supported by legs at the front and rear ends and at or near the centre, the rear legs being turnable or collapsable so that they can be folded or so placed that the end of the platform can be lowered to rest upon the ground or floor, in order that the vehicle can ascend onto the platform, and then readjusted to their normal position when the greater weight of the vehicle has passed the centre legs and so caused the platform to assume its horizontal position, substantially as and for the purpose herein set forth.

777,220. Carbureter for Explosive Engines. Fred Patee, Indianapolis, Ind. Filed October 24, 1901. Serial No. 79,755. (No model.)

Claim.—1. In a carbureter, the combination with a hydrocarbon retaining vessel, a partitioned chamber supported by said vessel, wicks laced through the partition and extending through a wall of the vessel, into the body thereof, and an inlet-valve for admission of air into the chamber beneath its partition, substantially for the purpose described.

777,229. Power-Transmitting Mechanism. Charles C. Vaughn, San Francisco, Cal., assignor of one-half to George J. McConnell, San Francisco, Cal. Filed March 31, 1904. Serial No. 200,976. (No model.)

Claim.—1. In a power-transmitting mechanism, the combination of a power-shaft, a conical driving-gear slidably mounted thereon, a spring adapted to normally hold said gear in operative position, a lever adapted to withdraw said gear from its operative position, a counter-shaft at right angles to the power-shaft, a pair of pinions feathered on said counter-shaft on opposite sides of said gear, and means for moving said pinions alternately to and from their desired positions of engagement with said gear, consisting of pivotally-connected rods, and a lever for oppositely actuating said rods in unison.

777,260. Stepper Attachment for Automobiles. Henry M. Landes, Sacramento, Cal. Filed March 14, 1904. Serial No. 198,008. (No model.)

Claim 1. In an automobile or the like, the combination with a main propelling motor, of a reciprocating carriage, means independent of the main motor for effecting and controlling the reciprocation of said carriage, and a stepper operatably associated with said carriage.

777,295. Speed-Regulator for Explosive-Engines. George Marx, Jr., Nuremberg, Germany, assignor to The Firm of Vereinigte Maschinenfabrik Augsburg und Mas-

HIGH-GRADE LAMPS

Acetylene Gas and Oil

ATWOOD MFG. CO.,

Amesbury, Mass.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address, Room 403, First National Bank Building, Danville, Ill.

WANTED—Fifteen to twenty traveling salesmen by a well-known and established tire manufacturing company, making standard goods. Only active men who know how to work effectively and all the time need apply. Exceptional opportunity for men of the right sort. Address, TIRES, P. O. Box 649, New York.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

SALESMAN.

A machine salesman, age 30, with 7 years' experience, 3 years with automobiles, desires position. Address E. N. B., care MOTOR WORLD.

FOR SALE—16-H. P. four-ton Panhard Levassor Delivery Truck in perfect running order; a splendid machine at a bargain. FAIRMOUNT ENGINEERING WORKS, 2652 Callowhill St., Philadelphia, Pa.

FOR SALE—Bargain: 1903 Winton Touring Car. 32x4 tires, speedometer, long tube horn, three lamps, side baskets; splendid order. Price $1100. Address J. C. WOOD, 1711 14th Street, Washington, D. C.

FOR SALE—Bargains: Oldsmobile Runabouts, $250 to $500; Oldsmobile Touring Car, $800; Cadillac, $500; 2-cyl. Toledo, $800; Orient Runabout, with top, $100; Columbia Electric, $350; Steamers, $50 up. Many others. Send for list. NATIONAL AUTOMOBILE CO., Washington, D. C.

FOR SALE—White 1904 Touring Car; guaranteed in perfect condition and newly painted; $325 worth of extra equipments; price $1400; with top and glass front, $1500. Reason for selling, have bought 1905 White. H. B. MALLORY, Danbury, Conn.

FOR SALE—One 1904 White, with canopy top, nearly new, $1500; one Pope-Hartford, run about 300 miles, $750; three Oldsmobiles, 1903 model, $250, $300 and $400; one Pierce-Motorette, leather top, good repair, $350. AKRON AUTOMOBILE GARAGE, Akron, O.

FOR SALE—1904 model four-cylinder 20 H. P. vertical, air-cooled touring car; seats five. This car was originally a Santos-Dumont, but has been equipped with standard pattern sliding gear transmission, three speeds ahead and reverse; direct drive on high speed; one lever controls all speeds; one foot tread throws out clutch and applies brake; other foot tread throws out clutch and applies emergency brake; throttle and spark advance on steering wheel; car under perfect control; is in fine condition; tires practically as good as new. Write for photograph, further description and prices to A. S. HILL, Kalamazoo, Mich.

FOR SALE—Six latest 1903 Oldsmobile Runabouts, entirely new, fully guranteed. Four more second-hand Oldsmobiles, first class condition. Must be sold at once. Prices reasonable. R. D. CHAPIN, 1312 Jefferson Ave., Detroit, Mich.

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chinenbaugesellschaft Nurnberg A.-G., Nuremberg, Germany. Filed March 3, 1903. Serial No. 145,968. (No model.)

Claim.—1. In combination, a valve, a lever connected thereto, a movable fulcrum for the said lever comprising a lever w, a governor for controlling the position of the said lever w, mechanism for operating the lever b arranged to be disengaged therefrom, and means for throwing the said mechanism out of engagement with the said lever b at a certain point of the stroke, substantially as described.

777,369. Motor-Vehicle Attachment. Henry Hayes, Denver, Col. Filed May 16, 1904. Serial No. 208,160. (No model.)

Claim 1. The combination with a motor-vehicle, of a figure attached to the front portion of the said vehicle and provided with a swiveled supporting-wheel in front.

2. The combination with a motor-vehicle, of a figure pivotally attached to the front portion of the vehicle, for movement in a verticle plane, said figure having a supporting wheel beneath the forward portion thereof.

777,457. Battery-Case. Reinhold H. Wappler and Frederick H. Wappler, New York, N. Y. Filed April 20, 1904. Serial No. 204,046. (No model.)

Claim 1. A battery-case, comprising a base and a cover therefor both having series of aligning and corresponding grooves for receiving the battery-cells, means for connecting the cover to the base, parts secured to the base and between which the cover at opposite edges is received, and which means are intermediate of the aforesaid parts, terminals secured to the case, and means for completing the electric circuit between the cells and to the terminals.

777,571. Casting Apparatus. Herbert G. Underwood, Stamford, Conn, assignor to H. H. Franklin Manufacturing Company, Syracuse, N. Y., a Corporation of New York. Original application filed June 17, 1897. Renewed January 11, 1900. Serial No. 1,145. Divided and this application filed December 8, 1902. Serial No. 134,430. (No model.)

Claim.—1. In a casting apparatus, a source of supply for the material to be cast, an exit-port for communicating with the source of supply, a model having an ingate for communicating with the exit-port, a supporting member for the mould movable relatively to the exit-port, means for forcing the material from the exit-port through the ingate into the mould, a clamping member movable toward and from the supporting member, and movable means connected to the clamping member for actuating the same automatically, substantially as and for the purpose described.

777,578. Hydrocarbon-Burner. George E. Whitney, Boston, Mass., assignor to Whitney Motor Wagon Company, Kittery, Maine. Filed February 27, 1899. Serial No. 706,253. (No model.)

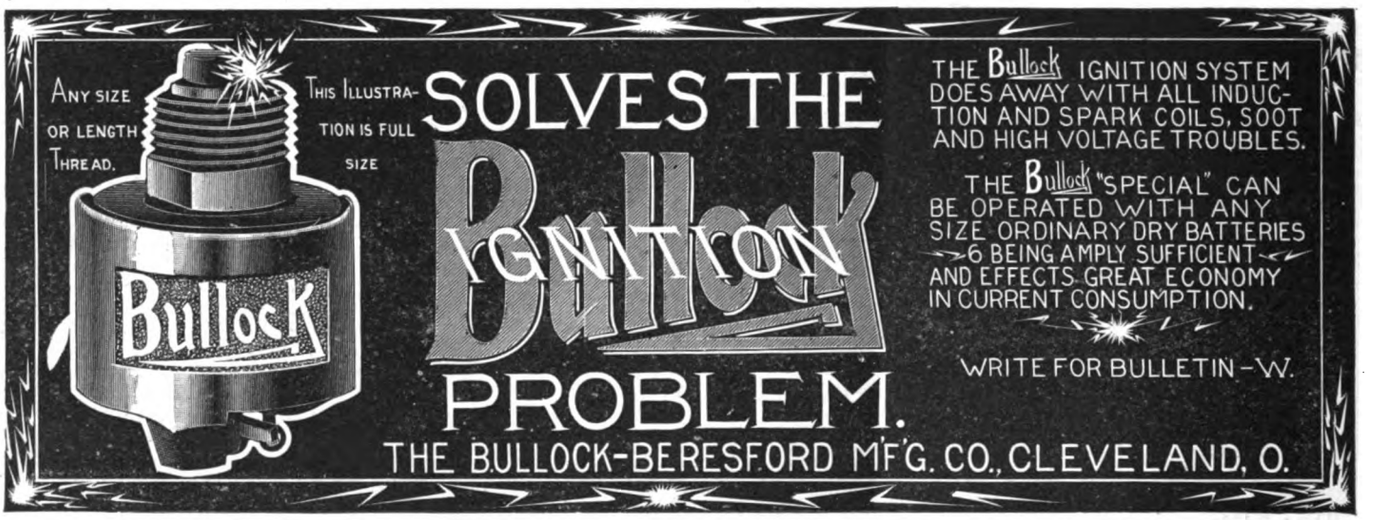
Claim 1. The within described hydrocarbon-burner comprising top and bottom plates normally separated by intervening spacers and held together by tubular members passing through said plates and headed over at the outer face of each, air-supplying tubes arranged within said tubular members and in contact therewith at the bottoms of the latter but separated therefrom at the upper ends of the latter, said tubular members being constructed to furnish communication from the chamber between said plates to the resulting annular space between said tubular members and said air-supplying tubes.

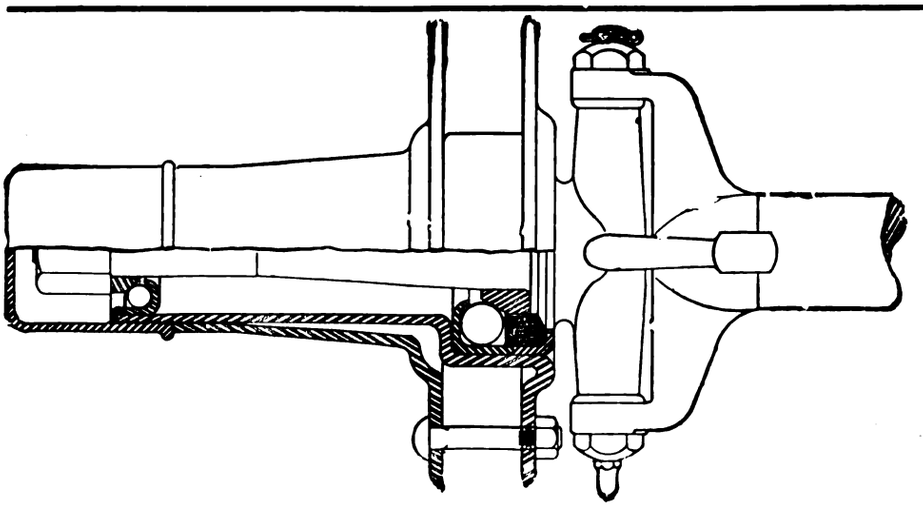
777,617. Inflatable Vehicle-Tire. Jay W. Farnoff, Buffalo, N. Y., assignor of two-thirds to Henry Koons, Buffalo, N. Y.; Edward L. Koons and Mary A. Reiman executors of said Henry Koons, deceased. Filed January 21, 1904. Serial No. 190,028. (No model.)

Claim.—1. An inflatable tire consisting of an annular inner tube, a filling-piece held against the inner circumference of said tube and having lateral extensions, and an outer covering surrounding said tube and the filling-piece and having opposite lateral extensions to fit the extensions on the filling-piece, substantially as set forth.

777,618. Fastening for Vehicle-Tires. Jay W. Farnoff, Buffalo, N. Y., assignor of two-thirds to Henry Koons, Buffalo, N. Y.; Edward L. Koons and Mary A. Reiman, executors of said Henry Koons, deceased. Filed January 21, 1904. Serial No. 190,029. (No model.)

Claim.—The combination of the wheel felly, a metallic band secured to said felly and having its longitudinal marginal portions extending beyond the sides of said felly, a tire having lateral extensions, and channeled locking-hoops embracing said extensions and the said marginal portions of the metallic band.





THESE HUBS are drawn from Sheet Steel.

Extremely light and strong Hubs with a smooth surface for finish are obtained.

Center line of Spokes is close to Steering Head. Smooth and Easy Steering is obtained.

Races are GROUND IN POSITION.

Cones and Cone Seats on Spindles are GROUND TO GAUGE.

We manufacture for the trade only.

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WHEN YOU USE
FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

A big and profitable seller to all jobbers, dealers and garages.

OUR PROPOSITION IS INTERESTING.

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Your
SPECIFICATIONS
for
FORGINGS
should reach us promptly to insure
Seasonable Deliveries.

ARE YOU READY?
WE ARE.

THE BILLINGS & SPENCER CO., Hartford, Conn., U. S. A.
Makers of
Drop Forgings of Every Description.

THE ONLY WAY

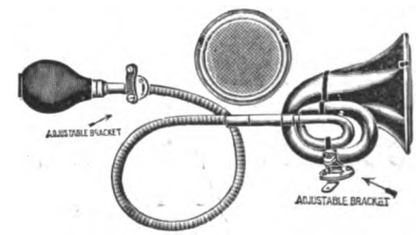
to build automobiles that will stand the test is to use sheet metal parts in place of castings.

WE DO HEAVY AND DIFFICULT STAMPING.

The Crosby Co.,

BUFFALO, N. Y.

LA TUBA HORN



THE latest European idea of a horn. Note extra coil in the body of horn which produces a deep and melodious tone. Two sizes, $10.00 and $12.00 each, complete.

We have in stock forty other sizes and styles of horns. Catalog mailed on request.

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Manufacturer, Jobber, Exporter and Importer,

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Boston Branch: 202-204 Columbus Ave. Boston, Mass.
Philadelphia Branch: 318-320 North Broad St., Philadelphia, Pa.

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Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

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AUTOMOBILE EQUIPMENT COMPANY
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Peerless Motor Cars.

THE PEERLESS MOTOR CAR CO.,
Cleveland, Ohio.

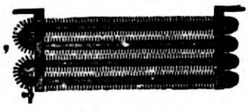
QUINBY
AUTOMOBILE-BODY
DEPARTMENT
EMERSON BROOKS, Manager.
1534 Broadway, cor. of 45th St., New York.
Telephone, 6536-38th St.

TOURING CAR

THE F. B. STEARNS CO.,
CLEVELAND, OHIO, U. S. A.

RADIATORS,

TANKS,
MUFFLERS,
FENDERS,
HOODS.



BRISCOE MFG. CO., - Detroit.

To Operators of Steam Cars:

Write us for printed matter on the NELSON STEAM WATER PUMP, the only positive high pressure boiler feed.

JOHN SIMMONS CO.,
104-110 Centre St., New York.



Springfield Top

PATENTS PENDING.
Aluminum Bodies
Aluminum Fenders
Aluminum Hoods.

Springfield Metal Body Co.,
7 Cypress St.,
Springfield, Mass.

HOMES IN THE SOUTH.

There are in the Southern States awaiting development thousands of acres of uncultivated farm lands in tracts of all sizes, which can be purchased very cheaply. They are productive, healthy, and close to good markets. In ten States reached by the lines of the

SOUTHERN RAILWAY.

For information about opportunities now available, prices of and, character of soils, etc., write to
M. V. RICHARDS, Land and Industrial Agents,
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BALDWIN CHAINS AND SPROCKETS

The Baldwin Chain Company

— MAKE —
Automobile Chains, Sprockets, Spur and Beve Gears.

Baldwin Chain & Mfg. Co.,
Worcester, Mass., U. S. A.

THE HILL PRECISION OILER

Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
832 Austin Ave., Chicago, Ill.

Non-Freezing Water Jacket Solution

(SOLVAY PROCESS CO.'S)
will stand 30° below Zero Fahr. without Freezing.
For sale by all Automobile Supply Houses.

THE CARBONDALE CHEMICAL CO., Carbondale, Pa.
NEW YORK, BOSTON, BALTIMORE, CHICAGO, PITTSBURGH.

THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,
9 Packard Ave., Racine, Wis.

THE DUBRR-WARD CO., No. 1787 Broadway, New York Distributors.

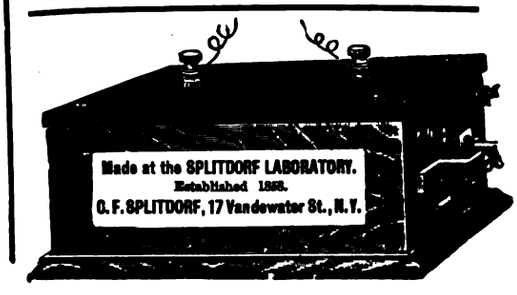
ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor.

Big Four Route TO St. Louis

"The Way of the World" to the World's Fair

For information as to rates, hotels and boarding houses, address nearest Big Four Agent, or

WARREN J. LYNCH,
G. P. and T. Agent, Cincinnati, O.



THE GOODMAN COMPANY,
94-95-96 Tribune Building, New York.

Enclosed find $2.00 for which enter my subscription to

The Motor World

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Name _____

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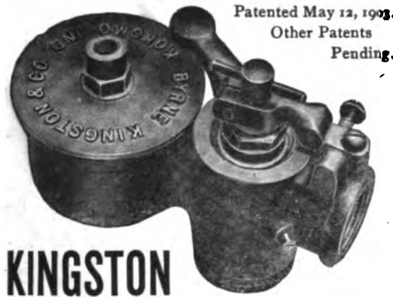
"Makers of Smart Automobile Lamps."

Be Sure YOUR CAR is Equipped With Them. **AMESBURY, MASS.**

Kingston Carburetor.

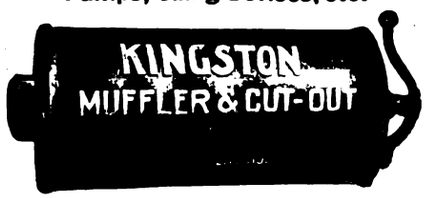
OVER 22,000 IN USE.

Patented May 12, 1903.
Other Patents Pending.



KINGSTON

Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

Pat. Jan. 20, 1901.



TRADE **GRADOMETER** MARK.

An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.

THE ADAMS COMPANY, Dubuque, Iowa.

DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 88 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

If You Are Rushed—Have More Work Than You Can Handle In Good Time—Let Us Help You Out.

WE ARE HELPING OTHERS ON THEIR SPECIAL MACHINE WORK.

WHY NOT YOU?

THE CASE MANUFACTURING CO., Columbus, Ohio.

Makers of Front Axles, Rear Axles, Transmission Gears and Special Parts.

Send for Circular No. 8.

It you are going to build automobiles you will want this circular. It describes our Axles, Change Gears, Cone Clutches, Mufflers, Steering Gears and other standard parts. All of these parts have been designed with unusual care. They are suitable for cars of all classes.

FEDERAL MANUFACTURING COMPANY, Elyria, Ohio.

Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.

NEW YORK SHOW—Section "D," Concert Hall; CHICAGO SHOW—Gallery Spaces 241, 242. 243 and 244.

THE MANUFACTURERS FOUNDRY CO., Waterbury, Ct.

WILL EXHIBIT SAMPLES OF VARIOUS TYPES OF

CYLINDER AND OTHER CASTINGS

WHICH THEY ARE PRODUCING FOR THE AUTOMOBILE TRADE

At MADISON SQUARE GARDEN, New York City, JANUARY 14th to 21st, 1905.

CONCERT HALL—SECTION C.

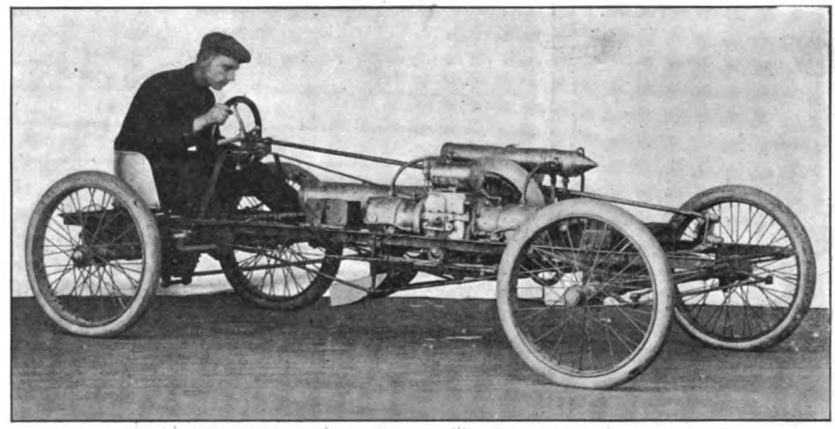
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WHITNEY CHAINS

The "Ford" Racer and "Whitney" Chains.

Everybody knows what they have been doing.

Chain,
"WHITNEY"
Roller Type,
1-inch Pitch.



The Jumbo "Seeing New York Car," operated by Park Carriage Co., 241 Fifth Ave., New York, made by "Gibbs" and driven by "Whitney" Chains.



Chains,
"WHITNEY"
Roller Type,
2-inch Pitch.

THE WHITNEY MFG. CO., Hartford, Conn.

WHITNEY
PAT. SEPT. 1904.

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OLDSMOBILE
Proclamation No. 2.

Mr. Buyer:

We ought to know how to build the best automobile of to-day. We have had 20 years' experience, have built more machines than any other maker in the world, and have the largest factories. The crowning triumph of up-to-date American automobile construction, the **100 per cent. plus** of Oldsmobile excellence, is our new

20 H. P. TOURING CAR.

$1400

Here is what we give you at the price:—

SPEED—6 to 40 miles per hour. Has surprising ability to climb hills on high gear.

BODY—Side entrance, heavily upholstered, hand buffed leather.

SEATING CAPACITY—Five passengers. Wheel base 90 inches.

RADIATOR—Honeycomb cooler—unsurpassed for efficiency.

MOTOR—Double opposed, 20 H. P.—cylinders 5¼ x 6 in. Simplest construction. All parts readily accessible. Valve mechanism above cylinders, away from dust and mud. Both valves mechanically operated. Noise of exhaust completely eliminated.

Do you want the discomfort, small power, breakages and trouble of the cheap tonneaus,—the complication, chauffeur and difficult adjustment of the four-cylinder cars? We think not. You want extreme comfort, a side entrance, surplus of power on hills and speed on the level, simplicity of construction, and that well-known Oldsmobile reliability.

It is yours at $1400.00, January Delivery.

Write us or our agents for further information, and place your order early.

OLDS MOTOR WORKS,

1332 Jefferson Avenue, DETROIT, MICH.

Members of Licensed Association of Automobile Manufacturers.

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GOODRICH TIRES
FIT ALL ROADS.

The GOODRICH CLINCHER AUTOMOBILE TIRE is an American tire built for American roads and affords the opportunity to travel untrammeled and on an itinerary of your own choosing. It is a matter of record that the longest and hardest trips have been successfully made on Goodrich Tires.

Winners of the GRAND PRIZE at the St. Louis Fair.

THE HIGHEST HONOR EVER AWARDED AUTOMOBILE TIRES.

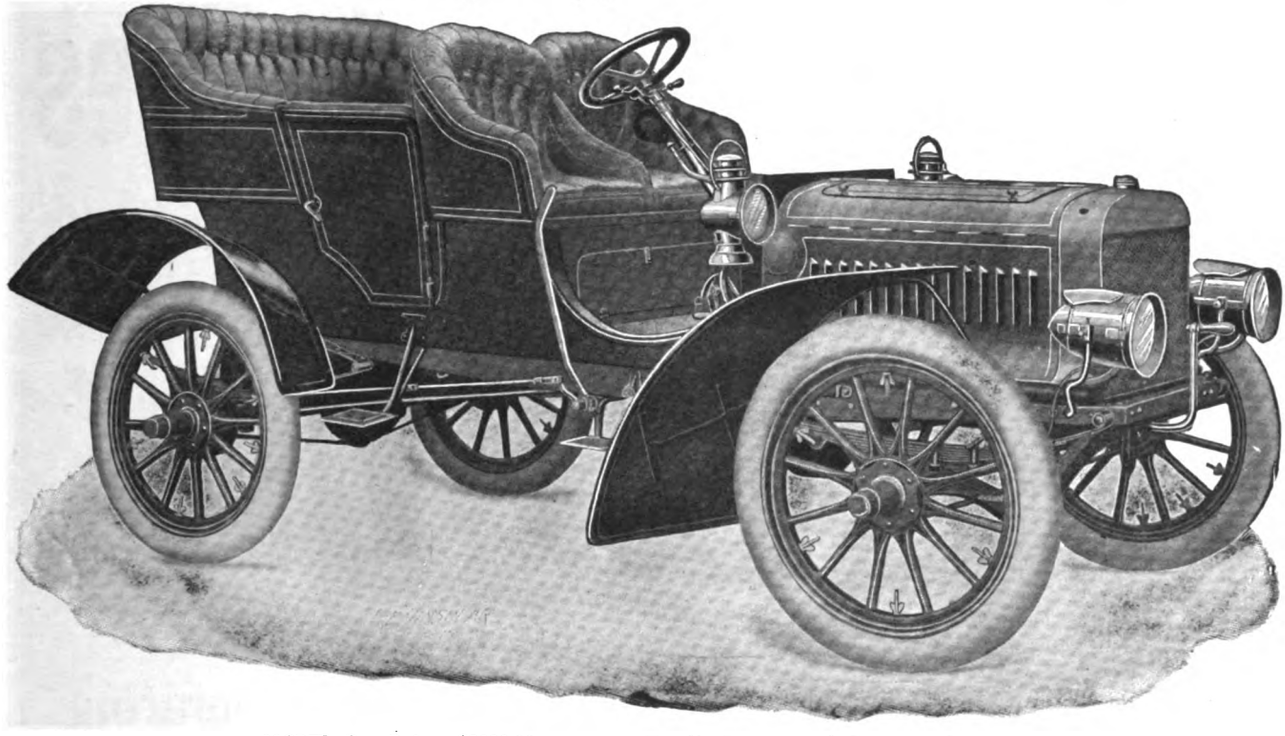
THE B. F. GOODRICH CO., Akron, O.

NEW YORK, 66-68 Reade St. and 1625 Broadway.
BOSTON, 157 Summer St.
BUFFALO, 9 W. Huron St.
CLEVELAND, 420 Superior St.
SAN FRANCISCO, 393 Mission St.
DETROIT, 90 E. Congress St.
CHICAGO, 141 Lake St.
PHILADELPHIA, 909 Arch St.
DENVER, 1444 Curtis St.
LONDON, E. C., 7 Snow Hill.

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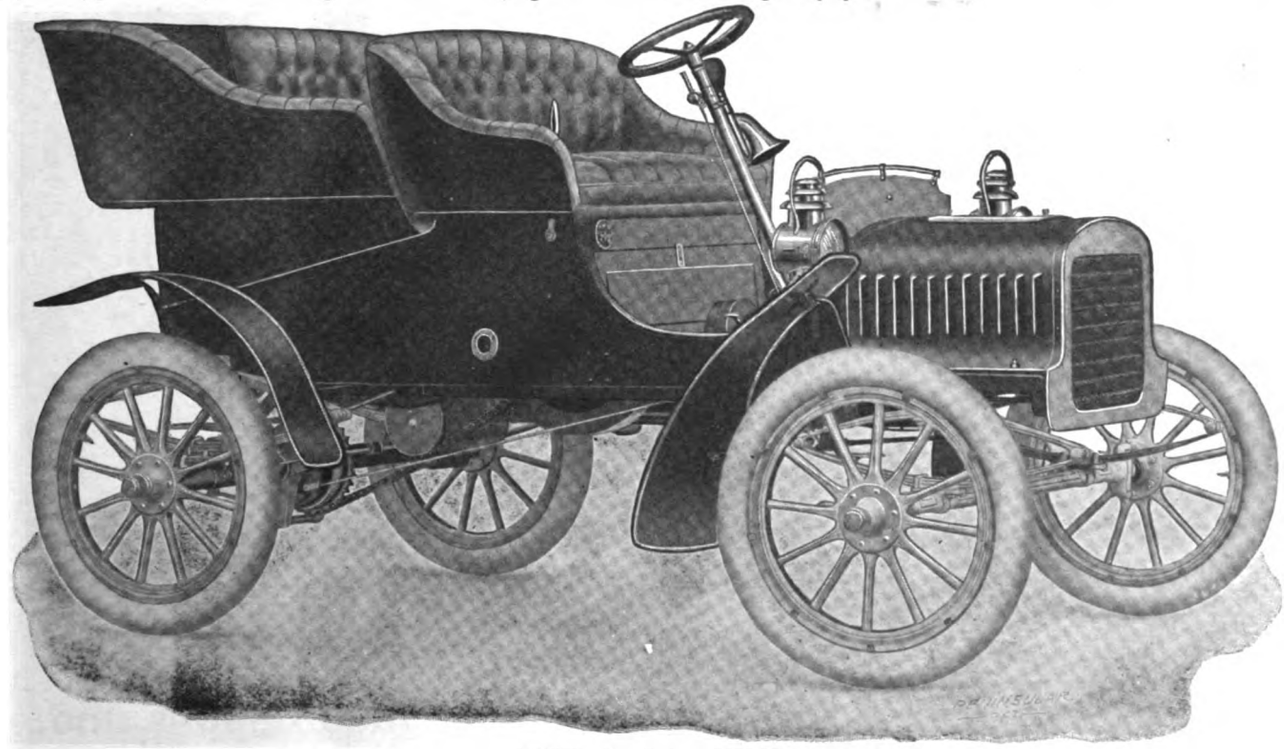
THE RECORD OF THE FORD.

Victory after victory is credited to the Ford light racing car. When you consider that this car gets its power from two of our standard type horizontal motors, you must admit it is proof positive of the correctness of the Ford design and construction for speed, strength and power. The Ford cars have established a record in every day use of consistent reliability and unvarying satisfaction.



MODEL B. Price, $2000.00. Henry Ford's Latest and Greatest Success.

A striking example of the distinctive Ford construction. Weight 1710 lbs. Four-cylinder vertical motor developing over 20-horsepower. This gives our car more power for its weight than any car of equal price in the world. Consequently there is less wear on the tires and ample reserve power for steep grades and sandy roads. Wheel base 92 inches direct drive with universal coupling, cylinders 4x5 water cooled; automatic oiling devices with force feed, large side entrance tonneau seating three people.



MODEL C. Price, $950.00.

The improvements on the FORD two-cylinder car places this model ahead of any car on the market at anywhere near the price. Both in style and mechanical construction this car is a year in advance of its nearest competitor. Double opposed motor of 10 actual horsepower, planetary transmission, chain drive, and increased gasoline capacity. The most stylish low-priced car on the market.

SOME GOOD TERRITORY YET FOR LIVE AGENTS. WRITE US TO-DAY FOR FULL INFORMATION.

THE FORD MOTOR CO., Detroit, Mich. See Exhibit, Space G, at New York Show.

JOHN WANAMAKER, Selling Agent for New York and Philadelphia.

Canadian Factory, THE FORD MOTOR CO. OF CANADA, Walkerville, Ont.

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Suit Against Michelin Tires

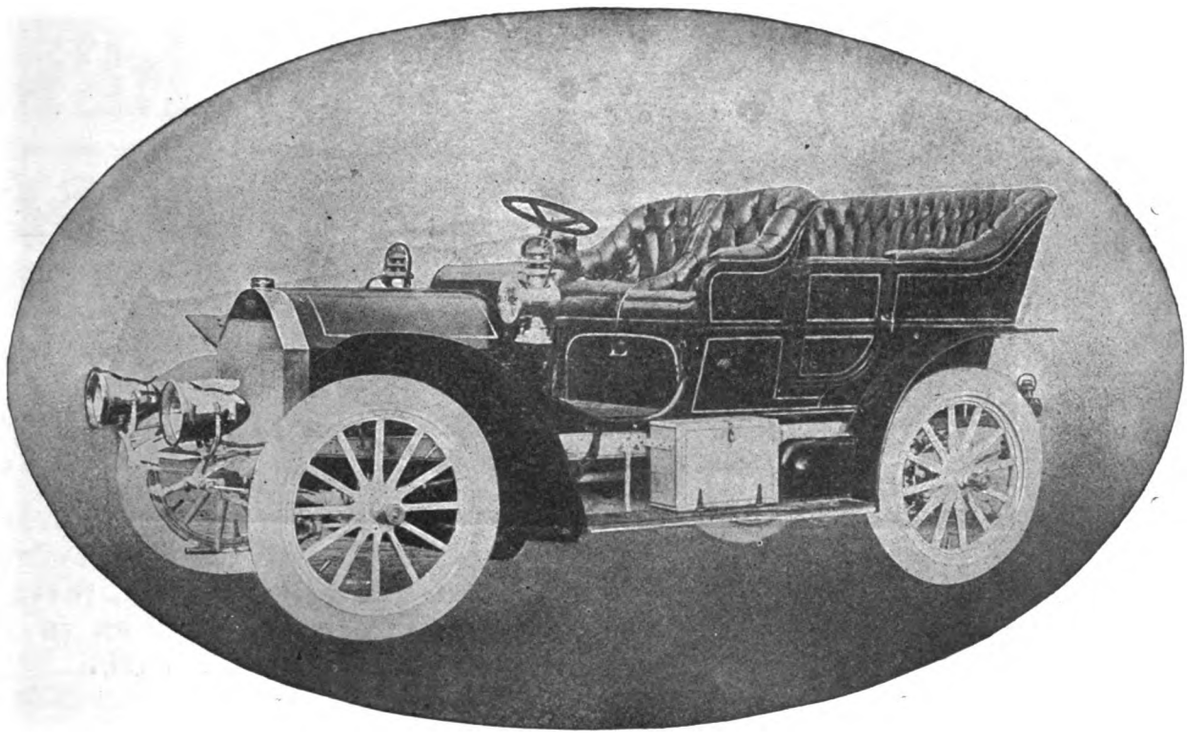
We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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Locomobile

1905 GASOLENE CARS.

OUR COMPLETE FOUR-CYLINDER LINE; RECORD FOR RELIABILITY; AND FACILITIES FOR EARLY SPRING DELIVERY WILL INTEREST EVERY AGENT.

1905 MODELS

15-20 H. P.—$2,800	20-25 H. P.—$3,700	30-35 H. P.—$5,000	40-45 H. P.—$7,500
20 h. p. motor with mechanically operated valves. Make and break ignition, magneto. Three-speed transmission. Pressed steel frame. Wheel base, 92 in. Weight, 1800 lbs. Side-entrance tonneau.	25 h. p. motor with automatic inlet valves, and jump spark ignition. Three-speed transmission. Channel steel frame. Wheel base, 96 in. Weight, 2300 lbs. Side-entrance tonneau.	35 h. p. motor with mechanically operated valves. Make and break ignition, magneto. Three-speed transmission, direct drive on top speed. Pressed steel frame. Wheel base, 106 in. Weight, 2500 lbs. Side-entrance tonneau.	45 h. p. motor with mechanically operated valves. Make and break ignition, magneto. Four-speed transmission. Pressed steel frame. Wheel base, 110 in. Weight, 2800 lbs. Side-entrance tonneau.

THE *Locomobile* COMPANY OF AMERICA, Bridgeport, Conn.

NEW YORK—Broadway, corner of 76th Street.
PHILADELPHIA—No. 249 N. Broad Street.

BRANCHES.

CHICAGO—No. 1354 Michigan Avenue.
BOSTON—No. 15 Berkeley Street.

Member Association of Licensed Automobile Manufacturers.

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BULLETIN OF G & J RECORDS

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.
Peerless Green Dragon,
by Barney Oldfield:
9:12 3-5.

WORLD'S TRACK RECORDS,
Peerless Green Dragon,
by Barney Oldfield:

1 mile,	0:51 1-5	"
5 miles,	4:29	"
10 miles,	9:12 3-5	"
15 miles,	14:03 3-5	"
20 miles,	18:45 2-5	"
25 miles,	23:38 3-5	"
50 miles,	48:39 1-5	"

WORLD'S TRACK RECORDS FIVE MILES, For LIGHT WEIGHT and MIDDLE WEIGHT CARS.
Ford Racer,
by Frank Kulick:

1st	mile, 59	sec.
2nd	" 57 2-5	"
3rd	" 56 4-5	"
4th	" 55 1-5	"
5th	" 55 1-5	"

Total, 4:43 3-5

WORLD'S 1-MILE TRACK RECORD for LIGHT and MIDDLE WEIGHT CARS.
20 H. P. Ford,
by Frank Kulick,
55 sec.

WORLD'S TRACK RECORDS SIX TO TWENTY-FIVE MILES FOR STRIPPED TOURING CARS.
Peerless Blue Streak,
by Charles Burman:

6	miles,	6:24
10	"	10:40
15	"	16:02 2-5
20	"	21:24
25	"	26:50 1-5

WORLD'S 5-MILE TRACK RECORD FOR STRIPPED TOURING CARS.
Pope-Toledo,
by B. F. Dingley:
5:09 3-5

WORLD'S 1-MILE TRACK RECORD FOR STRIPPED TOURING CARS.
Pope-Toledo,
by George Fuller:
1:00 3-5

WORLD'S TRACK RECORDS ONE AND FIVE MILES, FOR STOCK CARS IN FULL TOURING CONDITION.
Pope-Toledo.
by B. F. Dingley:
1 mile, 1:11 3-5
2 miles, 6:02 1-5

Every World's Track Record

IS NOW HELD BY

G & J THREAD FABRIC TIRES.

When the G & J Tires excel so unquestionably in racing work, which is known by everyone to be the hardest of all tests on tires, there can be no question in anyone's mind as to their great durability in ordinary road work.

TAKE A TIP

from the following famous drivers and

USE G & J's.

BARNEY OLDFIELD, FRANK KULICK,
WEBB JAY, FRANK CROKER,
FRANK GARBUTT, B. F. DINGLEY,
CHARLEY BURMAN, GEORGE FULLER.

Dec. 18, at Los Angeles:

B. F. Dingley, in Pope-Toledo, broke one and five mile records for stock cars in full touring condition.

1 mile, 1:11 3-5. 5 miles, 6 0:2 1-5.

Dec. 21, at Los Angeles:

Barney Oldfield, in Peerless Green Dragon, lowered all track records from two to nine miles.

2 miles, 1:46; 5 miles, 4:29; 9 miles, 8:04.

This performance gives Oldfield and G & J Tires every world's track record from one to fifty miles.

G & J TIRE CO.

Factory, 549-617 East Georgia Street, INDIANAPOLIS, IND.

Branch:
429 Wabash Avenue,
CHICAGO, ILL.

Branch:
247 Jefferson Avenue,
DETROIT, MICH.

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Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This new edition of this handsomely bound and artistically printed book, containing illustrations of about 125 gasolene cars, will be ready for mailing about Feb. 1st, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

The 1904 edition is now out of print.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

IF THE RIM

LESSONS OF 1904

are taken to heart

"SWEDOH" Spring Steel Rims

are likely to be the general equipment of all good machines in 1905.

"SWEDOH" SPRING STEEL RIMS have conclusively demonstrated their superiority by the severest tests in actual service, giving results unattainable with rims made of ordinary stock.

"SWEDOH" SPRING STEEL RIMS are made true and stay true.

True as "SWEDOH" steel is axiomatic.

THE AMERICAN TUBE & STAMPING CO.,

Bridgeport, Conn.

We own and operate our steel billet-making and hot and cold rolling mills and stamping works.

The Old Reliable

WATERLESS KNOX CARS

FOR 1905.

HIGHER IN QUALITY. LOWER IN PRICE.



Superb in Style and Finish.

The Knox 1905 two-cylinder (air-cooled) machine is as quiet and as smooth working as any four-cylinder machine, with only half its complications.

14-16 H. P. Side-door Tonneau, -	**$1900**
14-16 H. P. Convertible Surrey, -	**1750**
14-16 H. P. Folding Front-seat Runabout,	**1500**
Single Cylinder Folding Front-seat Runabout,	**1250**

1905 Models will be on exhibition at the New York and Chicago Automobile Shows.

Knox Automobile Co.

SPRINGFIELD, MASS.

Member Association of Licensed Automobile Manufacturers.

Selling Agents in all Principal Cities.

Waterless Knox Automobiles awarded GRAND PRIZE at Louisiana Purchase Exposition.

Will exhibit at the Automobile Show, Madison Square Garden, New York, Jan. 14th to 21st, 1905.

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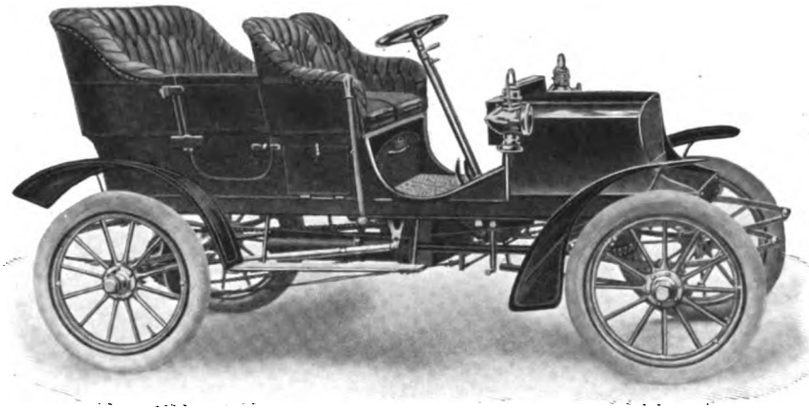
THE HEIGHT OF THE SEASON

— FOR THE —

PREMIER AIR-COOLED

— IS —

JANUARY and JULY.



Did you ever stop to think when you saw your neighbor in New York drive away in his Premier, the thermometer at 0°, that the other fellow's neighbor in Los Angeles was enjoying the same privilege with the thermometer at 80°.

It's a business proposition for agents.
It's a satisfactory proposition for drivers.

Get the "CAR OF QUALITY," and have a satisfactory business proposition for next year. (The air cooled has no season.)

PREMIER MOTOR MFG. CO., - - - Indianapolis, Ind.

FIFTH ANNUAL

Automobile Show

Under the auspices of the Automobile Club of America, National Association of Automobile Manufacturers, and Madison Square Garden Company at

MADISON SQUARE GARDEN

NEW YORK

JANUARY 14th TO 21st, 1905

JAMES C. YOUNG, Manager

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a Happy and Prosperous
New Year.

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Chicago.

Meet us at the New York Show—Space W.

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FOR 1905.

"The Car of Power."

This superb new creation for the coming season must be seen to be appreciated. It first appeals to the purchaser by its beauty, then it satisfies him by its speed, strength and durability.

These cars have our tried and tested 1904 Motors, 14 Horse Power, 2 cylinder, horizontal, opposed. Strong planetary transmission, Warner differential, Hill Precision Oiler, Kingston or Schebler carburetor, expanding rear-hub brakes, full elliptic springs, 86-inch wheel base, 30-inch wheels, 3 1-2 inch tires, side entrance body, individual front seats.

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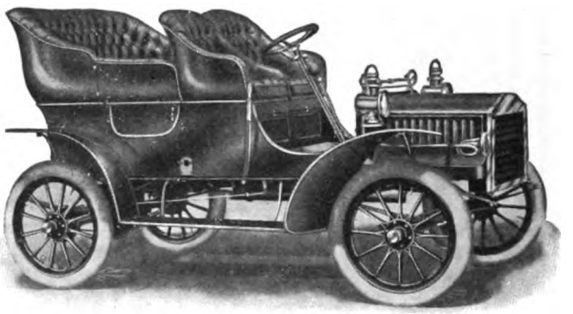
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MICHIGAN AUTOMOBILE CO.,

KALAMAZOO, - MICHIGAN.

We shall be at the New York and Chicago Shows.

Two Models,



Model E, - PRICE $1,250

THE ROYAL TOURIST

$3000.00.

32-38 H. P. DOUBLE SIDE ENTRANCE BODY.

ITS EQUAL HAS NEVER BEEN PRODUCED BEFORE.

READY TO DELIVER NOW.

ROYAL MOTOR CAR COMPANY, Clevoland, Ohio.

New York Show, - - Section "M."
Chicago Show, - - Stands 33-34-35.

NEW ENGLAND AUTOMOBILE CO, 182 Columbus Ave., Boston, Mass.

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"The Maxwell"



16 H. P. TOURING CAR
Price, for the Present, $1550

8 H. P. TOURABOUT
Price, for the Present, $700

MAXWELL POINTS

are bound to appeal to you on account of their extreme practical value to the average American automobilist.

The small number of parts in "Maxwell" constructions and the absolute simplicity of each part places these two cars in a class by themselves. If you want an automobile that is to be depended upon—one in which there is "nothing to do but ride" and which is a stranger to the repair shop, then get posted as to the "Maxwell." It is the car for *you.*

NO PUMP. NO CHAIN. Double opposed motor in front under the hood and easily accessible in every part. Transmission case and crank shaft cast in one piece of aluminum. Noiseless, smooth and strong.

Agencies for 1905 are now being placed.

MAXWELL-BRISCOE MOTOR COMPANY, - Tarrytown, N. Y.

"PUT DOWN 4 AND SUBTRACT 2,"

And any teacher who knows his book and is free from prejudice cannot but tell you that the rnotor that successfully performs the subtraction and accomplishes with two strokes all that others require four to accomplish is a distinct advance in the art.

The 2-Cycle Motor used in the Elmore Car

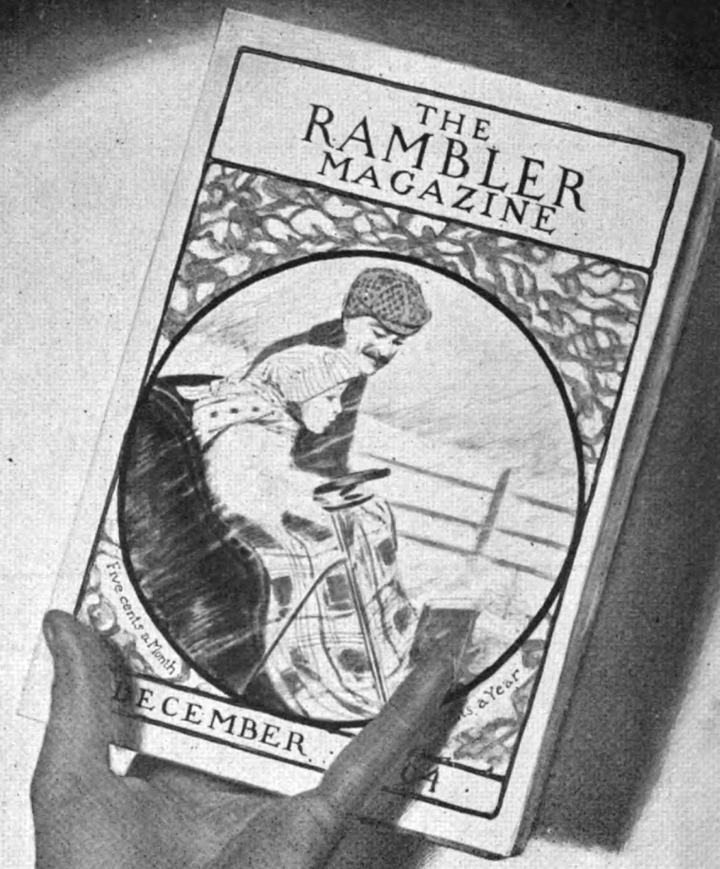
is an advance of the sort. There is no lost motion—no useless strokes.

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They are free for the asking.

ELMORE MANUFACTURING CO., Clyde. Ohio.

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Rambler



The current issue of THE RAMBLER MAGAZINE contains a thorough description of our 1905 models, and other items of general interest. A copy will be sent, free, on request.

THOMAS B. JEFFERY & COMPANY,

Main Office and Factory, KENOSHA, WISCONSIN.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, December 29, 1904. No. 14

WILL GET ITS ROYALTIES

Jury Decides for Electric Vehicle Co. in Case Involving Steering Knuckles.

The Electric Vehicle Co. has won its suit against the Weston-Mott Co., Utica, N. Y., for royalties due under the Elliott steering knuckle patent. The case was tried before Judge Ray and a jury in the United States Circuit Court at Utica on the 23d inst., and a verdict rendered for the plaintiffs for $1,092.67 and costs.

The proceedings in no way involved the validity of the Elliott patent, which has since expired, being in the nature of a non-fulfilment of contract. It appeared from the evidence that on October 25, 1901, the Weston-Mott Co. agreed to recognize the validity of the patent in question and to pay a royalty on each knuckle thereafter produced. Despite the facts, no payments were made, the Weston-Mott people refusing even to state the number of knuckles they had produced and sold until the Electric Vehicle Co. took the matter to the court and compelled the disclosure of the information. The suit for royalties was then instituted.

Argentine Lowers Its Rates.

The Argentine Republic has fixed the duty on finished motor cars and motor vehicles of all kinds, together with spare parts and fittings for the same, at the rate of 10 per cent ad valorem. Hitherto motor cars have paid 50 per cent and other kinds of motor vehicles and parts and fittings paid 5 per cent. To the new duty of 10 per cent must be added the additional duty of 2 per cent, leviable on articles subject to a tariff duty of 10 per cent ad valorem or more.

Here's a Deep, Dark Secret.

Unusual secrecy is being preserved regarding the details of a company formed by capitalists of York and Lancaster, Pa., to manufacture automobiles. Although operations are expected to start next month, and twenty-five four cylinder cars are to be ready for delivery April 1, no names have been made public nor the place of manufacture disclosed. It is said that fifty men will be employed at the start.

November Exports Below the Record.

November was only a fair month for exports of automobiles and parts. The values were slightly less than for November, 1903, viz., $106,117 last month, as against $107,521 a year ago. As a result of this small decrease, and the larger ones of August and September, the showing for the eleven months of the fiscal year is less satisfactory than has been usual. For the eleven months ending November, 1904, $1,682,994 worth of goods were shipped abroad, as compared to $1,419,481 for the corresponding period of 1903, and $1,026,083 in 1902.

Big Jobbers to Enter Field.

The New York Sporting Goods Co., who for several years have been extensive wholesalers of bicycles and cycles accessories, as well as sporting goods, are making ready to embark in the automobile trade, and will do so on a large scale. They have already leased the entire building at 15 Warren street, New York, and obtained the services of Charles Richards, who for very many years has been E. J. Willis's right hand man.

Trying to Revive Fredonia.

It is reported that a plan is on foot to reorganize the Fredonia Mfg. Co., of Youngstown, Ohio, which was overtaken by financial trouble last summer. The plan contemplates supplying the concern with $100,000 capital and having it resume business in 1905.

Gets Tickets for the Show.

The Motor and Accessory Manufacturers have purchased a big block of admission tickets to the New York show, and these will be parceled to members at 25 cents each. There will be no occasion for the latter to negotiate direct with the show management.

Will Use His Own Name.

Henceforth, P. A. Williams, Jr., the well known Boston dealer, who has conducted his business as the Ford Automobile Co., will employ his own name. He will still retain the New England agency for the Ford car, but will handle the Marion, also.

TO CUT OFF COMMISSIONS

New York Dealers Strike at "Rake Off" System—Garage Tariff Waits on Cash Bonds.

Notwithstanding the absence of most of the importing members, who were attending the Paris show, there was a remarkably good attendance on Thursday, December 22, at the meeting and dinner of the New York Automobile Trade Association, which took place at Reisenweiber's cafe. Twenty-four members were present. The knowledge that the schedule of uniform garage rates that had been drawn up by a special committee, details of which appeared in the Motor World several weeks ago, would come up for passage had much to do with the large turnout, and is indicative of the keen interest that is taken in this and kindred subjects.

Contrary to expectations, the new rate schedule was not adopted, consequently it will not become effective on January 1, as was intended. Instead of being sidetracked, however, the measure is merely postponed, and when it comes up again it bids fair to have attached to it a clause that will virtually wipe out the present system of paying commissions to chauffeurs. Furthermore, it is the endeavor of the association to have every member firmly enlisted in support of the standard prices and to provide a method of preventing violations by the filing of cash bonds with it by the members. It was this cash bond feature and the introduction of the commission issue that led to the postponement of the rate schedule.

When the latter was brought before the meeting it was found that every one present was in favor of it. But there were some absent members whose assent had not been secured. It also developed that there was a strong feeling that some effectual method of binding the signatories to the agreement and of providing a penalty for violations must be found if the plan was to prove successful. A cash bond was suggested, and several of the larger concerns represented announced their willingness to make a deposit of $1,000, or even more, with the association, to be forfeited in case any deviation from the rates scheduled was made. The idea met with general favor, but a difference of opinion developed

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over the amount of the cash bond. Some of the members declared that $1,000 was too large a sum to be taken from their business and locked up. They were doing business on a small capital, they said, and needed all they had in the business itself, and the withdrawal of $1,000 in a lump sum was, in some cases, an impossibility. At the same time, they hastened to add that the plan itself was a good one, and if it could be put through in a modified form it would receive their indorsement.

After a long discussion it was decided to hold the rate schedule in abeyance and to appoint two committees to deal with the matters under discussion. The first of these, consisting of A. Comancho, American Auto Storage Co.; W. M. Haradon, Victor Automobile Co., and J. Sheldon, Locomobile Co. of America, was intrusted with the task of securing the support of the few members who have not yet assented to the plan. The other, its members being C. Andrade, Oldsmobile Co. of New York; Elliot Mason, Pope Mfg. Co., and Secretary Kennedy, was directed to prepare for submission to the association a plan combining a cash bonding system with uniform storage rates. These committees are to report to the association during the New York show.

In the discussion a suggestion was made and received with favor, to the effect that an arrangement be made with the smaller concers whereby they could deposit, say, $250 in cash, and then pay over to the association $1 a month for ten months for each car they have on regular storage, "dead" storage not to be counted. In this way the required $1,000 could be accumulated by graduated stages and without marked inconvenience.

It was at this point that a member suggested that unless some method was taken to prevent it there would be danger of cutting storage rates under the guise of commissions. For example, a member could name the standard rate and then give a commission on the business, and if he had not been in the habit of paying a commission it would be an undoubted cut, yet one so cloaked that it would be exceedingly difficult to convict the offender of a violation of the agreement.

This precipitated a discussion of the commission business in general. As showing the change that has taken place since the subject came up for discussion a year ago, with the result of almost disrupting the association, it is noteworthy that the system of paying commissions had no outspoken advocates. The general opinion seemed to be that the practice had been abused, and that it could well be dispensed with. The only stipulation was that it must be abandoned by all. Provided that their competitors did this, each speaker announced the willingness of his concern to also discontinue the practice. As for the absent members—most of them, it will be remembered, being importers — enough was known concerning their views to render it certain that they would interpose no objection to the abandonment of the system.

It was made plain in the course of the discussion that it was commissions on storage cars and repairs that were aimed at, and not commissions on sales of cars. The latter are, of course, regarded as entirely legitimate and inseparable from the business of the association's members.

To a Motor World man Secretary Kennedy stated that efforts would be made to reach an early settlement of the matters under consideration. April 1 is the date now set for putting the new rates into effect.

The Week's Incorporations.

Detroit, Mich.—International Automobile Co., under Michigan laws, with $25,000 capital.

Brooklyn, N. Y.—The Hoyt Motor Co., under New York laws, with $100,000 capital. Directors—G. H. B. Hoyt, F. E. Kruger and G. A. Phail.

Rochester, N. Y.—United States Automobile Co., under New York laws, with a capital of $200,000. Directors—H. S. Woodworth, H. H. Love and J. A. Borhile.

Colorado Springs, Colo.—The Miller & Wilson Automobile Co., under Colorado laws, with $10,000 capital. Directors—R. A. Miller, H. A. Wilson and L. B. Miller.

New York, N. Y.—International Motor Car Supply Co., under New York laws, with a capital of $25,000. Directors—R. E. Jarrige, Louis Frankel and Richard Ely.

Rochester, N. Y.—The United States Automobile Co., under New York laws, with a capital of $200,000. Incorporators and directors—H. S. Woodworth, H. H. Love and John A. Borhite.

Wilson, N. C.—The Wilson Auto Transit Co., under North Carolina laws, with $100,000 capital, to operate automobile and electric car lines. Incorporators—W. B. Young, J. C. Hales and W. B. Kincaid.

Buffalo, N. Y.—The Frontier Gasoline Motor Co., under New York laws, with a capital of $10,000, to manufacture, lease and sell gasolene motors. Directors—Louis Ducro, W. H. Ahlers, George F. Graf and Oscar R. Cheney.

New York, N. Y.—The D. W. Payne Controller & Engineering Co., under New York laws, with $48,000 capital; to manufacture motors. Incorporators and directors for the first year—E. P. Hampson, W. A. Robinson and D. W. Payne.

Detroit, Mich.—The Reliance Motor Car Co., under Michigan laws, with a capital of $400,000. Incorporators—J. M. Mulkey, Fred O. Paige, Sydney T. Miller, William H. Miller, Hugh O'Connor, E. J. Davis, George C. Wetherbee, John V. White, Luck H. Bliss, J. T. Lynn, John B. Corliss, Frank R. Tharll, D. O. Paige and others.

In the Retail World.

The Pioneer Automobile Company, Benton Harbor, Mich., will open a garage on Elm street. The concern will handle the Olds line.

Abe Levi will, about January 1, open a salesroom and garage at Middletown, Ohio. Both automobiles and sporting goods will be carried.

A certificate has been filed with the New York Secretary of State by the Troy Automobile Exchange, to the effect that its capital stock of $5,000 has been paid in.

The agency for the White car has been secured by the Michigan Automobile Co., of Grand Rapids, Mich. Western Michigan is the company's territory on these cars.

The Motor Car Co., Newark, N. J., has added two new cars to its 1905 line, viz., the Winton and the Packard. The Cadillac and Autocar will be handled, as in the past.

W. S. Hartsough will open a garage at Aberdeen, S. D., in the building at No. 506 South Main street. He was formerly in charge of the repair shop of the Pence Automobile Co., of Minneapolis, Minn.

The Houston Motor Car Co. has been formed at Houston, Tex., and established itself at Nos. 1,013-15 Main street. A general sales and garage business will be conducted.

On January 1 the Southern Automobile Co., of Nashville, Tenn., will move into their new quarters at No. 167 North College st. The place is now being fitted up as an up-to-date garage, and will have space to store forty cars.

The Reo Automobile Co. is the style of a new concern just organized in Chicago with C. H. Foster as president. A company of the same name has also been formed in Cleveland, Ohio, but its personnel has not yet been disclosed.

Williams to Take a Partner.

P. A. Williams, Jr., New England distributor of Ford and Marion cars, takes unto himself a partner on Saturday next in the person of Miss Helena Clancey, of Brookline, Mass.

As everyone who knows Williams knows he does not let grass grow under his feet, therefore when he avers that the first two days following his marriage will be devoted to the endeavor to land a $5,000 order for "delivery wagons," the shock that would ordinarily be caused by such a statement is considerably softened.

Thereafter, according to Mr. Williams, the honeymoon proper will begin and will include an attendance at the Ormond, Florida, races.

Doctors Disagree; Courts Will Decide.

Two prominent physicians of Milwaukee, Wis., are involved in a legal tangle wherein an automobile plays a conspicuous part. Dr. John Bruess asserts that the car was sold him for $400, of which he paid $225 and gave notes for the remaining $175. He claimed that the machine was in bad condition and cost him more than the amount due for repairs, and therefore refused payment on the notes. Dr. R. J. Fleischer, who sold the car, would not pay for the repairs, and brought suit for the amount due him, while his opponent entered a counter claim for $500 damages.

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THEY SAW THE SIGNS

Pope Exhibit in Paris Caused "Misgivings" and Gave Frenchmen Food for Reflection.

As being the first American car designed along what are usually spoken of as French lines, and therefore directly conflicting with the home product, the Pope-Toledos exhibited at the Paris Salon have attracted a considerable amount of attention. If they have not created a sensation, they have at least been closely scrutinized and received with respectful attention. In some quarters extremely favorable comments have been made, although French tradesmen are, of course, chary of giving expression to their opinions. A correspondent of the Paris Herald voices some of these opinions when he says:

"There can be no doubt whatever about the fact that the Pope-Toledo automobiles, brought over from America at enormous expense to illustrate to the French manufacturers the progress that has been made in automobile construction outside Paris, have caused considerable misgivings in certain quarters. That is to say, their general excellence is so pronounced that French makers who have relied very largely on American custom for the disposal of their outputs have been made to see that they will shortly have to look up trade elsewhere.

"It can hardly be said that the Pope machines rank with the first four French makes, but it is obvious to any one after a close inspection that nothing in Europe can be produced to equal them at the price. These machines are made in enormous numbers, and though to some people this fact would be damning, to those who consider the matter carefully it becomes plain that in the end all makers will have to adopt the same method if they are to bring their prices within tolerable bounds.

"The workmanship throughout is of such a character as to give confidence to the purchaser, and especially is this the case in respect of the coachwork, which is made by the Pope people themselves. A handsome Pullman saloon on one of the 50 horse-power chassis has been surrounded daily by interested crowds, who talked of the 'comfortable' of it, and tried the 'comfortable' to such an extent that if it is not soon removed by some purchaser it will require re-upholstering."

Will Conduct Three Garages in Rochester.

Prominent Rochester (N. Y.) business men, headed by Harry S. Woodworth, the well known motorist of that city, have organized a company of more than ordinary financial strength and ambitious scope. It was originally intended to be called the General Automobile Co., and incorporation papers bearing that name were filed at Albany. Owing to the fact, however, that there is a company of that name operating in this city, it was decided to use the title The United States Automobile Co., and incorporation papers under this style have been filed.

The concern is incorporated with a capital of $200,000, and has organized with these officers: President, Harry S. Woodworth; treasurer, Henry H. Love; secretary, Austin F. Crittenden; directors, Harry S. Woodworth, J. Foster Warner, Charles F. Garfield, John A. Barhite and Austin F. Crittenden, of Rochester, and Henry G. Day, of Providence.

Of the $200,000 capital, $100,000 is 6 per cent. cumulative convertible stock and $100,000 common. The company will deal in automobiles and accessories, conduct a rental and repairing business, etc. It has secured a lease of a store at the intersection of Main street east and Elm street, which will be used as a show room for the exhibition of cars and the sale of commodities. Three garages will be constructed, one in the heart of the city, another at the eastern end of East Avenue and the third on Main street west.

Price was $150 Too Low.

Due to a confusion of figures in their advertisement in the Motor World last week, the Waltham Mfg. Co. has had a flood of inquiries respecting their 16—14 horsepower light touring car, Model F. The price given was $1,500; it should have been $1,650. The lesser figure is the price of the touring runabout, Model E, which, like Model F, is one of the notable additions to the Orient line, which is to be pushed with unwonted vigor in 1905. In giving announcement to this latter fact, the advertisement made it appear that the vigor would be applied in 1895—a mistake manifest on its face. The record of the Waltham Mfg. Co. is not a behind the times record, and when the full line for 1905 is disclosed it is stated that it will be found so complete and so up to date that the "sitting up and taking notice" will be general and noticeable.

Pope Transforms Another Car.

Like the Pope-Hartford, the Pope-Tribune car, which latter is produced at the Pope Mfg. Co.'s Hagerstown plant, has undergone a complete transformation. It bears no resemblance to the former model, being of the two cylinder vertical, water jacketed type, instead of a single cylinder air cooled, as before. A float feed carburetter, bevel gear drive, individual clutch transmission, giving three speeds forward and one reverse, are among the other specifications. The body will have bucket front seats and have a detachable side entrance tonneau.

Bicyclist Sues for Big Damages.

The Automobile Livery Co., of Los Angeles, Cal., is the defendant in a suit filed in the Superior Court of that city by Thomas H. Walsh, claiming damages in the sum of $5,790. Walsh alleges that while riding a bicycle along Spring street on December 4 last he was run down and thrown from his bicycle, whereby he sustained a broken leg besides other lesser injuries.

RELIANCE IS REORGANIZED

Detroit Concern Gets Fresh Capital and Makes a New Start Auspiciously.

Still another addition to Detroit's big automobile manufacturing concerns is promised as a result of the reorganization of the Reliance Automobile Manufacturing Co., which has just been announced. New capital has been secured, and the company's name changed to the Reliance Motor Car Co. Preparations are now being made to increase the force of workmen to 300 and to turn out 1,000 cars during 1905.

The new incorporation begins business with a capital of $400,000 and under the presidency of J. M. Mulkey, widely known as the president of the Detroit Salt Co., and a directory consisting of Fred O. Paige, State manager of the Mutual Life Insurance Co. of New York, vice-president; Frank R. Thrall, secretary and general manager; James T. Lynn, largely interested in gas and electric lighting; Sidney T. Miller, lawyer and capitalist; Hugh O'Connor, president Michigan Wire Cloth Co.; Geo. C. Wetherbee, manufacturer and wholesale woodenware.

Frank R. Thrall, the new vice-president, was for twelve years vice-president and actively engaged in the management of the Muncie Wheel & Jobbing Co., Muncie, Ind.

The business will be carried on at the old plant, 67-89 Fort street east, Detroit. It consists of thre large, brightly lighted floors, affording over 152,000 square feet of floor space.

Chauffeurs Favor an Age Limit.

Drivers of automobiles in the rental service should be at least old enough to vote, according to the tenets of the California Chauffeurs' Association. The association has appointed a committee to ask the San Francisco Police Commission that such a rule be established. The members of the association have been divided into three classes. In the first class are placed those competent to handle four cylinder cars. In the second are the two cylinder experts, and in the third are the one cylinder or runabout operators. Several of the San Francisco dealers are supporting the association in their age limit petition and classification arrangement.

Olds Agent Wins Big Wager.

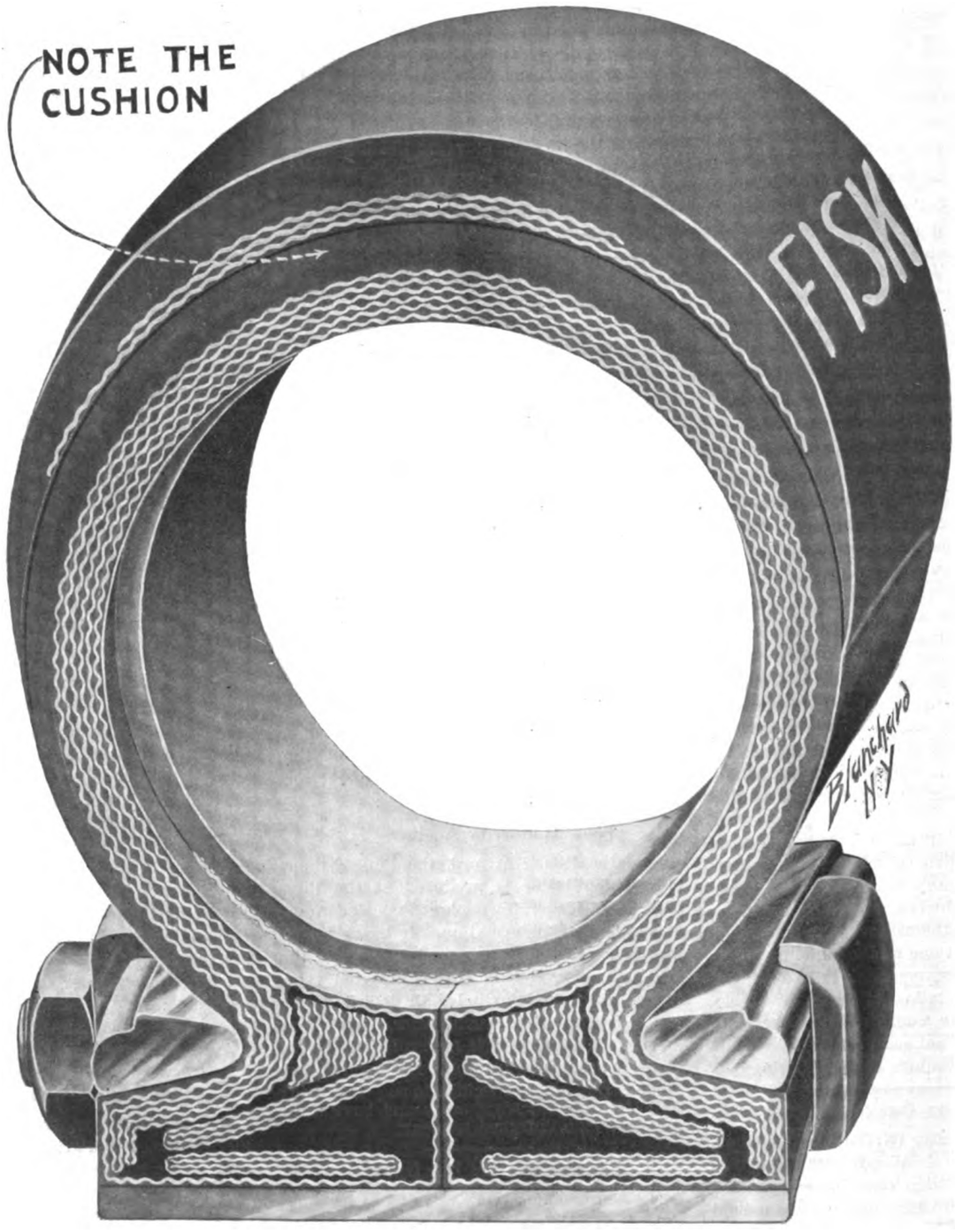
Maurice Fournier, brother of Henri Fournier, returned to Paris on December 21 after completing his tour of 5,000 kilometres (3,125 miles), in twenty days in an Oldsmobile runabout. The trip was undertaken as the result of a wager between Henri Fournier and M. Destrelle of 100,000 francs that the Oldsmobile could not travel 5,000 kilometres in twenty days. The trip was successful. The route covered was through Bordeaux, the Riviera, Italy, Austria, Switzerland, Germany and Belgium.

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HERE IT IS!

The 1905 FISK CONSTRUCTION

HEAVY CAR TYPE



IMPROVED FASTENINGS.

FISK RUBBER CO., Chicopee Falls, Mass

BRANCHES: New York, 754-756 Seventh Ave., Chicago, 52 State Street.

BOSTON, SPRINGFIELD, SYRACUSE, BUFFALO, DETROIT, SAN FRANCISCO, PHILADELPHIA, ATLANTA, ST. LOUIS, OMAHA, MINNEAPOLIS, DENVER, LOS ANGELES, LONDON.

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THE MOTOR WORLD

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CABLE ADDRESS, "MOTORWORLD," NEW YORK

Entered as second-class matter at the New York, N. Y., Post Office, November, 1900.

NEW YORK, DECEMBER 29, 1904.

The New York Show Numbers of the Motor World will be of date January 12 and 19. As always, they will deal with the Show in comprehensive fashion, and, if anything, will be even more than usually informing in character.

What the Year Wrought.

In preparing to turn over the proverbial new leaf, a glance at the pages of the past year reveals more of interest and instruction than the busy man in the bustling workaway world is inclined to believe is to be found there. Events succeed each other so rapidly that only the more volcanic are more than vaguely remembered. In this way Time leaves its footprints and movements attain force almost before it is realized that they are in motion. Perhaps the best example of the sort is the transformation of the model which only one year ago stood as the typical American car.

A year ago, in reviewing the events of the previous twelve months, we stated that the car which, more than any other, was typical of the American industry was one with a single or double cylinder, horizontal engine, placed in the centre of the car. Since then an almost complete transformation has taken place; a transformation that has, in the rush of crowding events, been almost unnoticed, or only dimly perceived. In the short space of a year a virtual revolution has been accomplished. The vertical cylinder engine, placed in front, has made gigantic strides, and if the horizontal, centrally positioned type has not been crowded out, it has been relegated to a secondary position. To-day there is to be found scarcely a maker who has not prepared for the 1905 market a car with its engine mounted under a bonnet. In an overwhelming majority of cases this engine has vertical cylinders; but in some of them the double opposed horizontal engine, transversely disposed, has been given the preference.

This virtually marks the end of an era. We have almost passed the transition stage, and while for a long time the horizontal motor, and especially in its opposed form, will be found on American cars, it will be in a decided minority. In future the standard type here will be, as it has for years been in Europe, a car having a vertical motor with multiple cylinders. Coincident with its appearance is the disappearance of the horseless carriage type of automobile. However views as to its permanency or utility may differ, the evolution of the new type has been completed, and everywhere it finds acceptance as the most approved form of the modern motor vehicle.

This transformation of the automobile has been much more complete in the case of the runabout, using the term in the sense of two or three years ago. Henceforth such a car will be little more than a memory. Whether the future two passenger vehicle shall be known as a runabout, a touring runabout or a light touring car is immaterial; the important part is that in design and construction the two and four or more passenger cars will be almost indistinguishable. That is to say, both will have bonnets, long wheel base and wheel steer. The change to a tonneau or side entrance body will transform a two passenger car into one seating four or five, or the latter type will undergo a like metomorphosis—reversed, of course—by the substitution of a body with a single seat for a double seated one. This point of convertibility will hereafter be a more important one, especially in the moderately powered and priced models.

The development of bodies especially adapted for use on automobiles, and particularly touring automobiles, has gone on apace. A year ago came the first awakening from the general indifference regarding bodies that had prevailed for so long. The open, unprotected body was replaced by a multitude of forms, ranging from sunshades and folding tops to entirely inclosed productions produced by experienced coachmakers. During the year experience has revealed many shortcomings and defects, and at the same time has pointed the way to many improvements designed to add to the comfort, pleasure and safety of the occupants of the cars. The rear entrance tonneau, long almost the universal type for four or more passenger cars, has been displaced by the side entrance style; and as this permits the use of either the surrey or tonneau kind of seats, a wide variety of styles have made their appearance. Taken as a whole, the art of body building as applied to automobiles has shown great advancement, and motorists in 1905 will find themselves much better served in this respect than they ever have been in the past.

The upward tendency in powers, prices and weights continues unabated. There is a wider range of each than ever before, although the expansion has not affected the lighter classes of vehicles to anywhere near so great an extent as the medium and heavy weights. Where a year ago touring car powers averaged under 20 horsepower, they now exceed that amount. Such ratings as 24, 28, 30 and 35 horsepower have become quite usual, and 40's and even 50's crop up occasionally. They are, of course, the outcome of a desire to supply the demand for an adequately equipped touring car that will prove itself equal to all demands made on it, regardless of the character of the roads or their gradients.

The passing of the single tube tire, referred to a year ago, has been accomplished. The clincher type of wheel covering now reigns supreme. Its design is undergoing modification, through the increasing desire to make the methods of fastening purely mechanical, instead of, as in the past, depending partly on the inflation of the inner tube. The increase in wheel and tire diameters still continues, and with good results. Another significant manifestation is the increasing attention given to non-slipping covers or treads.

Although the exports of automobiles and parts have continued to increase, the gain has not kept pace with that of previous years.

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The total for 1904 will be only about 15 per cent greater than that of 1903, whereas the latter exceeded that of 1902 by about 50 per cent. The meaning of this can easily be read between the lines. Formerly our exports consisted almost entirely of small cars—many of them steam runabouts. We still hold the bulk of that trade, but it is diminishing, and this decrease is reflected in our proportionately falling exports. There is every reason to believe, however, that we shall shortly begin to export touring cars in larger quantities, and when that movement begins the export values will again swell.

The year has seen the close welding of the Association of Licensed Automobile Manufacturers. There is no longer lukewarmness or perfunctory interest in its ranks. The members have all become thoroughly imbued with the spirit of its objects and are co-operating to a degree not previously thought possible. At the same time, the association has lost its bugaboolsh aspect to those outside the fold, and whatever may be the ultimate outcome of the litigation based on the Selden patent, it is now seen that the A. L. A. M. has not proved a detriment to or in restraint of trade. Without regard to the merits of the litigation, such influence as it has exerted has been good influence. Not even its bitter antagonist can deny the fact. And not the least of its good effects has been the wholesome check on the vulturelike company promoter. Concerns of standing have not been deterred from embarking in the trade. But the way of the professional promoter, who waves the "millions in it" wand, if it has not been made impossible, has been rendered unusually difficult, to the great good of the whole industry. Given freer rein, the great multiplicity of factories and the consequent overproduction which follows in his wake and which spells stagnation or ruin probably would be now in sight. His most notable effort of the year, the formation of a so-called "independent manufacturers' association," ended in a sorry fiasco. The independents have fought shy of such tempters, and the more substantial of them appear able and willing to paddle their own canoes without fear of obstacles.

Although no regularly designated endurance contest—such as marked the seasons of 1901, 1902 and 1903—was held this year, the tour to St. Louis proved to be a worthy successor to these successful enterprises. What the latter did for the industry and pastime was duplicated by the semi-transcontinental journey to the junction of the Missouri River to the Father of Waters. Not even the soul trying contest of 1903, with its troubled progress over mountain trails, amid torrential rains, surpassed it as a convincing testimonial to the surpassing excellence of modern automobiles. While favored with good weather for the major part of the distance, the expanse of country traversed was so great and the variety of roads—real and alleged—so infinite that the arrival of the tourists at their destination in practically undiminished numbers was a marvellous performance. It demonstrated beyond cavil that even the worst American highways possessed no terrors for well designed and soundly constructed cars.

Almost equally convincing was the result of the commercial vehicle test conducted in the spring under the auspices of the Automobile Club of America. It made plain that the self-propelled delivery wagon has reached a stage where it is eminently practicable. No scrutiny of costs, no comparison of service made by unbelieving superintendents accustomed to horse drawn delivery of goods need now be feared. In the contest under notice the contesting vehicles were turned over to express companies and put into service cheek by jowl with horse drawn wagons; and they proved themselves to be fully as reliable and far more speedy and efficient, as well as cheaper, than the latter.

It is distinctly disappointing, in view of this and other equally convincing tests, to note the small number of makers who are interesting themselves in the manufacture and marketing of the gasolene type of commercial wagons. Only one concern has gone into the matter in earnest. That this concern has been successful beyond all expectations should spur those who are moving half-heartedly in the matter to renewed efforts.

In the domain of racing much has been accomplished. The American industry has, during the last year, tasted the bitter and the sweet. On the road the miserable fiasco of the Bennett Cup trials was without mitigation of any kind; but the Vanderbilt Cup race, run on Long Island roads in October last, had its compensations. It proved that American cars were at least reliable, and only needed to be endowed with power akin to that of their foreign rivals to emulate them in the field which hitherto had been regarded as their own.

On the track we wellnigh carried all before us. The race meets of the year have brought to the front a plenitude of both cars and drivers of high class. As a consequence the merry game of record breaking has gone on with little interruption, until the close of the season finds them where they will not be easy to displace. Of the drivers, Oldfield will be accorded the palm with practical unanimity. His utter rout of the pick of the foreign cars and drivers at the Empire City track more than made amends for his reverse of a week earlier, and he closes the season fittingly in possession of almost the entire record table.

Wonders were wrought on the Florida beach last January, and the 39 seconds for the mile, accomplished by W. K. Vanderbilt, jr., is still unapproached, being world's record for either a straightaway or circular course, although it is not, strictly speaking, either a road or a track record. It is, however, considerably faster than either the mile or the kilometre European record.

COMING EVENTS.

Jan. 11-15—New York, Importers' Show, Herald Square Exhibition Hall.

Jan. 13—New York, Motor and Accessory Manufacturers, annual meeting, Hotel Astor.

Jan. 14-21—New York, National Show, Madison Square Garden.

Jan. 16—New York, American Automobile Association, annual meeting and election.

Jan. 19—New York, Superintendents' and Engineers' Branch of the Association of Licensed Automobile Manufacturers, meeting.

Jan. 20—New York, National Association of Automobile Manufacturers, smoker.

Jan. 21—New York, National Association of Automobile Manufacturers, annual meeting.

Jan. 21—New York, Automobile Club of America, annual banquet, Astor Gallery, Waldorf-Astoria.

Jan. 23-28—Ormond-Daytona, Fla., third annual speed carnival.

Jan. 23-28—Philadelphia, Automobile Show.

Feb. 4-11—Chicago, National Show, Coliseum.

Feb. 13-18—Detroit, Automobile Show.

Feb. 20-25—Cleveland, Automobile Show, Gray's Armory.

Feb. 27-March 4—Toronto, Automobile Show.

March 6-11—Buffalo, Automobile Show, Convention Hall.

March 13-18—Boston, Automobile Show, Mechanics' Hall.

March 13-18—Boston, Importers' Show, Symphony Hall.

March 27-April 5—Washington, Automobile Show.

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SMALL CARS WERE SCARCE

Few of Them in Evidence at Paris and Not Much Newness in Motors.

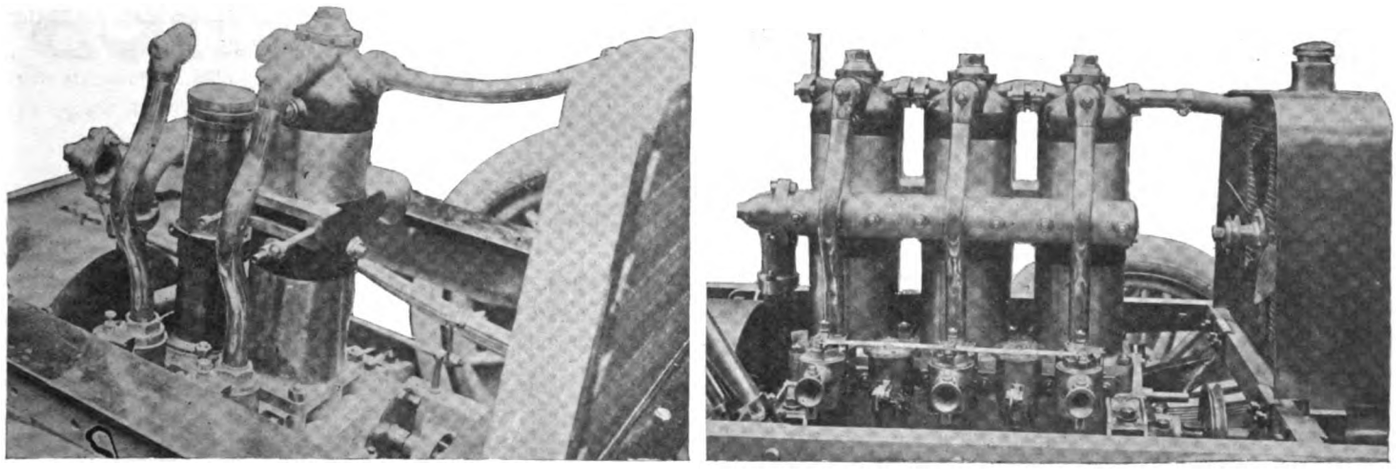
Paris, Dec. 16.—Apart from the uniformity of car construction that is apparent, the thing that most strikes the visitor to the Paris Salon is the almost complete absence of small vehicles.

It is true that one comes across a small car now and then; for example, the little car constructed by the Minerva Motors, Limited, of Antwerp, a Belgian concern running with English capital, and also by Gregoire, and perhaps one or two others, but these small cars are entirely swamped in the magnificent display of big vehicles that dazzle in all the brilliance of polished steel under the myriads of incandescent lamps from the glass roof and the beautiful illuminations of the stands. The small car has been getting smaller in numbers with each succeeding show, until now it has become difficult to pick them out in the great display of big vehicles.

The impression obtained by the foreign visitor is that the French makers have given up catering for the huge class, who can only afford to purchase cheap and reliable cars. To a certain extent this is true, but it would be a mistake to suppose that the French makers are no longer looking out for the requirements of the general body of automobile users. In a general way it may be said that the conditions of the automobile industry in France are not altogether favorable to the production of light and cheap cars. In an industry which is developing so rapidly it naturally follows that a large number of new makers are constantly entering the trade, when they start by giving attention to little cars usually built up from parts supplied by different firms, and then, when they start equipping themselves for manufacturing the vehicles themselves, they go in boldly for the bigger cars, with the result that in this country the small car is usually regarded as merely an introduction to the more serious part of the business. So long as the industry is carried out on these lines, it follows that the small car cannot develop so rapidly as it should do, because makers do not bring sufficient experience to bear upon the design and manufacture of these vehicles, so that the unsatisfactory character of the majority of the small cars put on the market is a further reason why makers should turn their attention to the big type of touring car into which French experience has mainly crystalized. Moreover, it seems to be a general rule that the French maker prefers to secure a big profit on a few expensive cars than to content himself with the same return on a heavy production of small and cheap vehicles.

As the French maker thinks he can see greater possibilities of profit in the big car, he seems to regard the small vehicle as a little beneath his reputation, and therefore it follows that in a show which is intended to be a manifestation of the French industry, the big car should almost entirely monopolise attention. As we have said in a previous letter, there is not much novelty observable in the cars themselves. It is only when we take each part of the mechanism, and see the many little changes and improvements, that we can understand the lines upon which the French industry is developing.

A striking feature about the show is that there is much less variety in the motors exhibited than was to be seen on previous occasions. As automobile engineers are gaining in experience they have lived down the freaks which used to make the show so interesting, in the sense that we were able to see how much misdirected ingenuity was being spent upon the designing of motors of every conceivable type that might appear to have some advantage over the four cycle engine. The only two-cycle motors exhibited are the Dobelli, of Italy, and the Rene Legros, which latter certainly possesses some promising features. This engine has one cylinder and two pistons, one of them being fixed. The fixed piston is carried on an arm hollowed out for the passage of the gas mixture from the carburetter to above the fixed piston. Over this piston travels another in the form of a cylinder with a cross head at a point so that it clears the end part of the fixed piston on the upward limit of travel. The cylinder has two very large exhaust ports, and a pipe connects a chamber communicating with the hollow arm carrying the fixed piston with the induction valve on the top of the cylinder. In operation the upward travel of the moving piston draws in a charge of gas up the hollow arm above the fixed piston, where it is compressed on the downward travel. The induction valve is loaded for the admission of the gas at a certain pressure, so that at the moment the moving piston descends and uncovers the exhaust ports the induction valve opens to admit the fresh charge, which expels the burned gas remaining in the cylinder. The great merit of this motor is its complete absence of complication, and it certainly appears to overcome many of the objections that are usually raised against the two-cycle motor.



THE LEGROS TWO-CYCLE MOTOR.

Duhme's Queer Vehicle.

A Cincinnati engineer named John H. Duhme has built a three-wheeled motor vehicle designed for trucking and farm work, and having a number of novel features. Two of the wheels are in the rear and are of the regulation wagon type, with wood hubs and spokes and steel tires. The third wheel is much larger than the other two and is fitted with a pneumatic tire. The power is furnished by a gasolene engine, which is geared to this large front wheel. It is claimed that the vehicle is easy to handle, particularly in congested streets.

Winton to Exhibit in London.

Space in the main hall at the Olympia show, to open in London, England, on February 10, has been secured by the Winton Motor Carriage Company. All the 1905 Winton models will be exhibited there.

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A Grand Prize

Has been awarded by the Juries of the
Louisiana Purchase Exposition Co. to

THE GEORGE N. PIERCE CO.

On its exhibit of

Pierce Automobiles

In recognition of superior quality in workmanship and materials, together with correct engineering and design.

The PIERCE Line for 1905 will include

PIERCE Stanhope, 8 H.P. - - $1200

Great Arrow, 24-28 H.P., Side Entrance, $3500

Great Arrow, 28-32 " " " $4000

Dealers can secure this splendid line now for all unoccupied territory and correspondence to this end is solicited.

THE GEORGE N. PIERCE CO., Buffalo, N. Y.

Members of Association of Licensed Automobile Manufacturers.

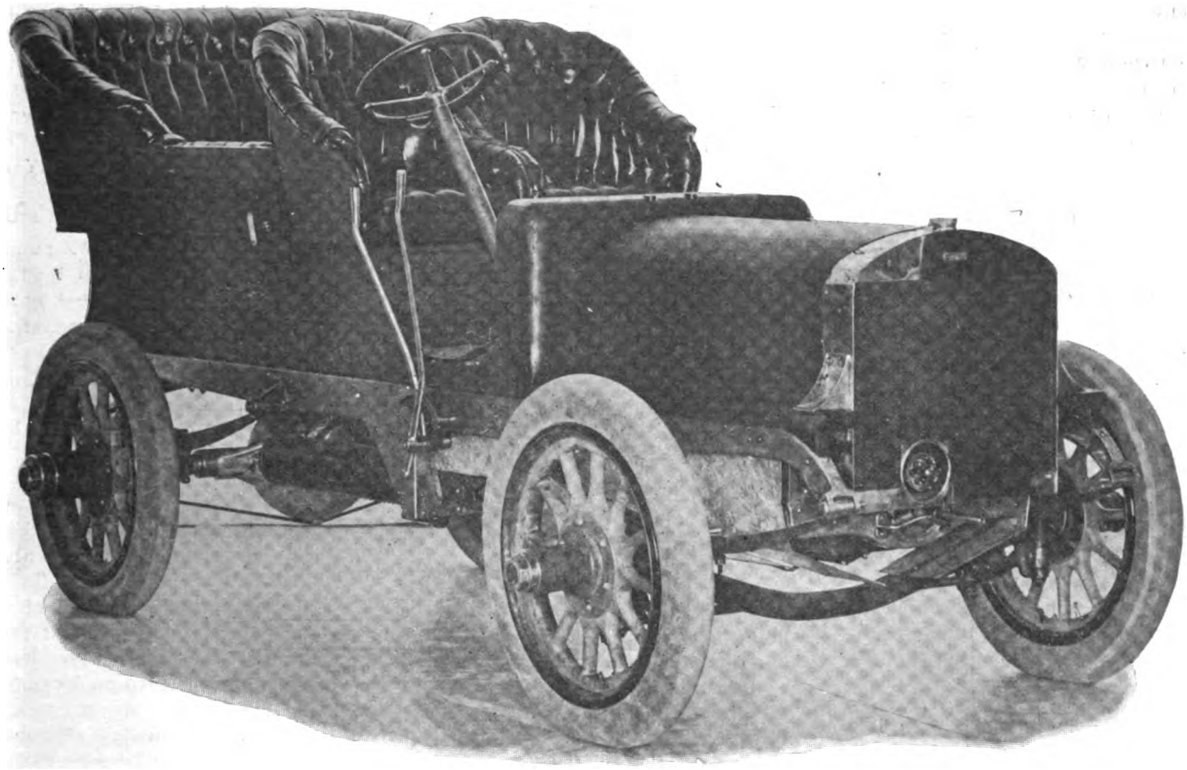
LIST OF AGENTS.

DOWLING & MAGUIRE, Boston Mass.
R. W. WHIPPLE, Binghamton, N. Y.
H. PAULMAN & CO., Chicago, Ill.
THE GEORGE N. PIERCE CO., Denver, Colo.
STIRLING AUTOMOBILE CO., Detroit, Mich.
N. L. BIEVER, Derby, Conn.
ELMIRA ARMS COMPANY, Elmira, N. Y.
WATERMAN BROS., Fresno, Cal.
EAST COAST AUTOMOBILE CO., Jacksonville, Fla.
J. A. PLACE, Geneva, N. Y.
L. H. JOHNSON, Los Angeles, Cal.
HARROLDS MOTOR CAR CO., New York, N. Y.
THE GEORGE N. PIERCE CO., Oakland, Cal.
WILSON & CO., Ottawa, Canada.
BANKER BROS. CO., Pittsburg, Pa.
H. J. WILLARD, Portland, Maine.
R. V. CONNERAT, Savannah, Ga.
C. P. JOY AUTOMOBILE CO., St. Paul, Minn.
MOBILE CARRIAGE COMPANY, San Francisco, Cal.
STANDARD MOTOR CAR CO., Scranton, Pa.
WESTERN AUTOMOBILE CO., St. Louis, Mo.
M. C. BLACKMAN, Syracuse, N. Y.
MILLER-MUNDY MOTOR CAR COMPANY, Utica, N. Y.
CENTRAL AUTOMOBILE EXCHANGE, Worcester, Mass.

NEW YORK AUTOMOBILE SHOW, Center Aisle, Section F; CHICAGO AUTOMOBILE SHOW, Spaces Nos. 49, 50, 65 and 66.

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First of the Four-Cylinder Cadillac Family.



None of the many new and radically differing cars that will mark the 1905 season has been more jealously screened from public view than has the four cylinder Cadillac, the principal specifications of which were exclusively given in last week's Motor World and an illustration of which is here shown. That it would be something more than ordinarily good went almost without saying. The Detroit concern's remarkable success with its single cylinder car, and its reputation for thoroughness, was sufficient guarantee that in departing from its established design and putting forth a multiple, vertical cylinder car it would be seen that it possessed the qualities necessary in an up to date touring car.

When the car itself appears—which will be during the Madison Square Garden show in January—the unusual qualities claimed for it will become apparent. General Cutting, of the local Cadillac company, who returned from a factory inspection last week, gave a Motor World man a glowing account of his first ride in the car. He extolled its entire freedom from noise and vibration and the remarkable flexibility of the engine. Of the latter he said that while on the high speed the engine was throttled down to such an extent that the operator stepped to the ground and jogged along with it, while on resuming his seat he opened the throttle and speeded the car up to in excess of forty miles an hour.

The car is rated at 30 horsepower, and will list at $2,800. It has a wheel base of 100 inches and a length over all of 146 inches. The favorite side entrance body—made either of aluminum or wood—with individual front seats, is used, and is free from tanks and similar encumbrances.

The engine has four vertical cylinders, cast separately with copper water jackets, all joints being ground to take care of leakages. A scored, cracked or injured cylinder can be replaced without the necessity of tearing the engine down, and at a cost of a few dollars for the new cylinder.

An automatic mixing valve supplies the four cylinders with gas of an even temperature by taking warm air from the exhaust. This device has been used for several seasons, and gives a perfect mixture under all conditions and is not affected by changes of weather. It is practically indestructible, and requires only occasional adjustment. An auxiliary air inlet is provided, which operates at the maximum engine velocity.

The engine is controlled by a hydraulic oil governor, gear driven, operating upon a variable inlet valve. The speed of the engine increases the pressure of oil in the governor, which correspondingly increases the opening of the inlet valve, thus admitting a greater quantity of gas.

Lubrication of the engine is by a gear driven pump, forcing the oil through one central pipe line, from which each cylinder receives its oil through a branch line. Only one sight feed is provided, the adjustment of which supplies each cylinder equally. Each cylinder receives its given amount of oil regardless of the grade percentage, by having a series of bridges in the engine frame to prevent the oil from flowing to either end.

The crank shaft is supported on five main bearings of white metal and bronze, with a ingenious arrangement for oiling them.

The transmission gives three speeds forward and reverse, with the direct drive on high speed, transmitting the power to the rear axle by a ball bearing shaft drive. The gears are cut from drop forged steel blanks, and can withstand the shock of changing from direct drive to reverse when going at the speed of fifty miles an hour. Absolute silence in operation is secured through accuracy in cutting the teeth and providing a permanent bath of oil.

All speeds are operated from one lever, thereby securing a remarkable ease in handling. By applying the foot brake the clutch in the flywheel is released, the engine immediately diminishing its speed automatically. In an emergency the reverse can also be used as an additional brake.

The transmission is coupled to the flywheel by means of leather faced duplex disks with adjustable springs between. The springs permit of the clutch engaging more slowly and with greater ease, thereby avoiding too sudden and unnecessary strains on the motor.

Both the engine and transmission are kept in permanent and perfect alignment by hanging each to two pieces of heavy steel tubing running parallel with the pressed steel frame. This tubing is set in a cross frame of pressed steel and held in place by four bolts. The

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ease with which the engine and transmission can be moved from the chassis is obvious when it is only necessary to first remove these four bolts.

The rear axle receives its power through a bevel gear and shaft drive.

The dash is made of aluminum, in which is formed a five-gallon gasolene tank, fed from a large reserve tank in rear of car. A glass gauge is provided, showing at all times the quantity of gasolene in tank. There is also an oil reservoir in the dash with sufficient capacity for a thousand-mile run.

Boston to Have a New Club.

Due largely to the influence of the rather exclusive policy of the Massachusetts Automobile Club came into being on Thursday of last week at the offices of the Columbia Motor Vehicle Co., on Stanhope street.

The prime movers were W. W. Burke, manager of the Columbia M. V. Co.; Harry Fosdick, A. E. Gilmore, of the Rambler branch; Underhill, of the Reed-Underhill Co. H. L. Bowden, one of the Bay State's few real democratic millionaires, and a number of others more or less prominent in Massachusetts automobile circles, who by their presence or letters lent hearty support to the movement.

Active steps will be taken at once to place the club on a sound footing, and from present indications the movement is assured of active support throughout the State.

One of the first matters to be taken up will be the agitation of a uniform State ordinance permitting a speed of twenty miles an hour outside of city limits.

The Fairy Tale of Four Drummers.

According to St. Louis (Mo.) newspapers, the utility of the automobile for the use of commercial travellers has been recently established by a test conducted "under the auspices of the Travellers' Protective Association." Four "drummers" of that city are alleged to have made a four days' trip in an automobile between Flora, Ill., and East St. Louis, during which they are said to have covered 385 miles at a total cost for repairs to the car of $1.85. Unfortunately, however, when the Motor World's St. Louis correspondent attempted to verify the story, he was told by the secretary of the Travellers' Protective Association that the test had not been made under the auspices of the organization, and that he did not know any of the four men who made the trip. Only one of the men had his name in the city directory, and he has left the firm he had been with and they did not know his present location.

Not "Farm Implements," Say Farmers.

Farmers of Ingham county, Mich., want automobiles insured. They have asked the Ingham County Farmers Mutual Insurance Company to class them, not as farm implements, but with other vehicles standing in the barn of the insured. The matter came up at the annual meeting of the company, and was referred to the executive committee.

SALTS TO PREVENT FREEZING

Souther Takes a Strong Stand Against Them and Explains the Mischief They Make.

During the last few years very many of those who make and those who use automobiles have been using calcium chloride very successfully to prevent freezing in the cooling systems, and because no outward indication of injury has shown itself these men believe that the chloride or any other salt is harmless.

The case is not unlike that of the water companies, whose pipes are subject to electrolytic action. Some of these companies believe that they are escaping the inroads of electrolysis by some marvellous good luck or some condition entirely different from other companies. They have attributed leaks in service pipes, shut-off valves and connections in general to ordinary wear and tear, until finally some investigating mind began to examine more closely. The result of such examination has usually shown that even the heavy cast iron pipes are found to be slowly disintegrating; some of them it is possible to cut with a knife, nothing but the graphite of the cast iron being left.

An automobile is not wholly dissimilar. The manufacturers may have thought that the leaks in elbows, or connections that did develop, if such did develop, were nothing more or less than ordinary deteriorations. They may not have kept the cars in their possession long enough to develop any injury. The cars have, doubtless, passed into the hands of unsuspecting purchasers, and they will get the results of the slow but sure electrolysis that has been taking place.

Immediate destruction of radiator, elbows, unions and metals coming in contact with the electrolyte is not probable. It takes time to dissolve metal in this way, but that it does dissolve is as sure as fate.

Take such a combination of metals as a radiator, for example, delicate and efficient—efficient because it is delicate, made up of copper, brass, solder, connected with iron or steel pipes, which, in turn, may be connected with a cast iron engine. All of these metals are either positive or negative to one another. This means that one of them gives and the other takes. The metal in the cooling coil is not thick enough to stand very much giving up, and is sure to be injured in a season or two.

One of the first questions that the writer would ask if he were purchasing a second-hand machine would be, "Have you ever used in your cooler any salt to prevent freezing?" Were the question answered in the affirmative, the writer would say positively that he would not consider the purchase of that machine. Even though the machine were perfect in every joint with no sign of leak in the cooling system, there would be no assurance that leaks would not develop within a short period.

The writer reaps no benefit from urging the use of alcohol and glycerine or a combination of both, but is merely taking this position to keep purchasers and users of automobiles out of trouble. A delicate machine like an automobile has ills enough of a legitimate kind; there is no use manufacturing other kinds.

HENRY SOUTHER.

Y. M. C. A. Enlarges its Usefulness.

Boston's Y. M. C. A. automobile night school, which is now in its third succesful year, is to be supplemented by the institution of a day class. This was first talked of several weeks ago, and the project met with such a favorable reception that it has been decided to go ahead with it. Accordingly the advisory board of the school has made the following announcement:

"The school will be in operation throughout the entire year for private instruction, special arrangements having been made for private instruction for ladies at hours which will suit their convenience. This department has been placed in charge of a thoroughly competent man of excellent reputation. A day school for business men has been established, and will open on Monday, January 2, at 4:30 p. m., the steam course meeting on Monday and Thursday afternoons, and the gasolene course on Tuesday and Friday afternoons from 4:30 to 6 o'clock. These classes will be held in the Park Square Automobile Station, in Columbus avenue. Additional arrangements have been made for road and driving lessons, and those desiring instruction in any particular car will be able to secure special instruction."

The attendance upon the school this year is very large, and exceeds that of last year. Many have entered whose homes are in distant cities, Omaha, St. Louis, Pittsburg, Chicago and many others from New England and adjoining States.

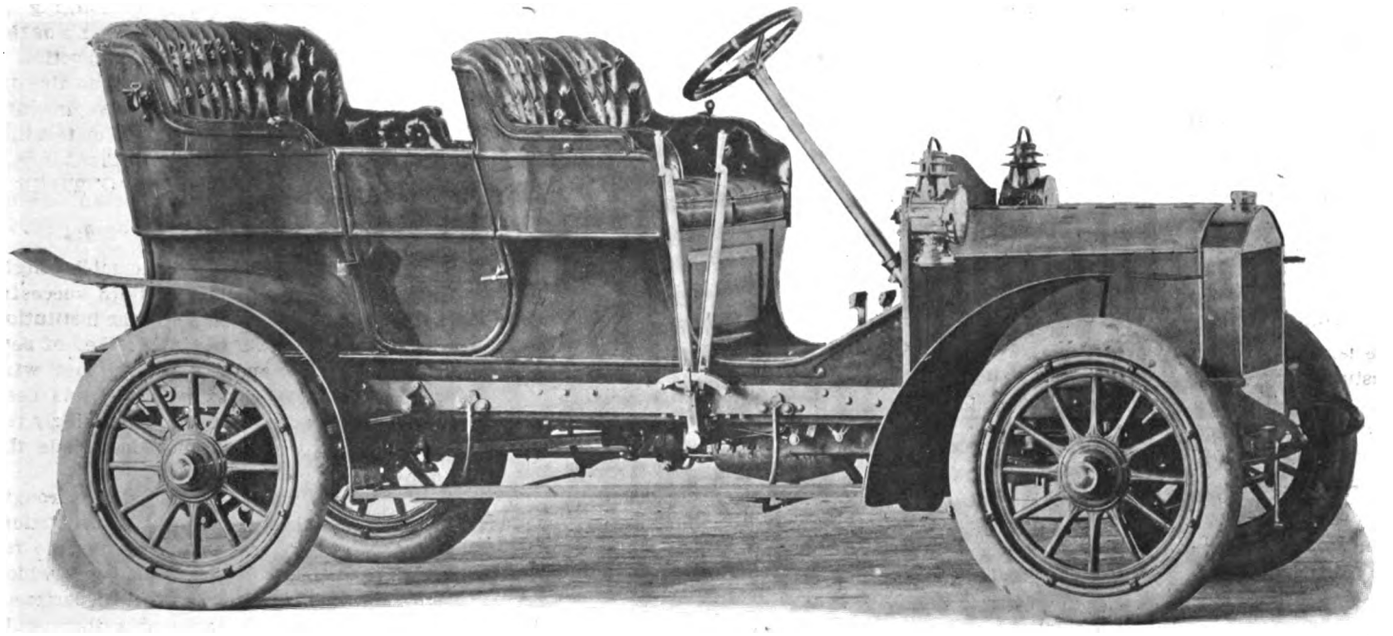
The association has established a registration bureau for chauffeurs in connection with its employment department, and special facilities will be offered to men desirous of securing chauffeurs' positions with the opening of the season. A large amount of additional apparatus and several cars have been secured for the gasolene course, and every effort will be made to increase the amount of practical instruction.

To Test Accessibility of Parts.

It is proposed by Les Sports, a new French journal, to promote a series of novel competitions, beginning in February next. The competitions will have for an object the demonstration of dismounting various parts of a motor car. An official timekeeper will stand ready, and the judge will say to the competitor, "Give me the exhaust valve, take out the float of the carburetter," etc. The ease with which such organs are detached and replaced is a matter of importance to motorists, and these original trials will undoubtedly prove of great service.

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Here's the Long Looked-for Four-Cylinder Autocar.

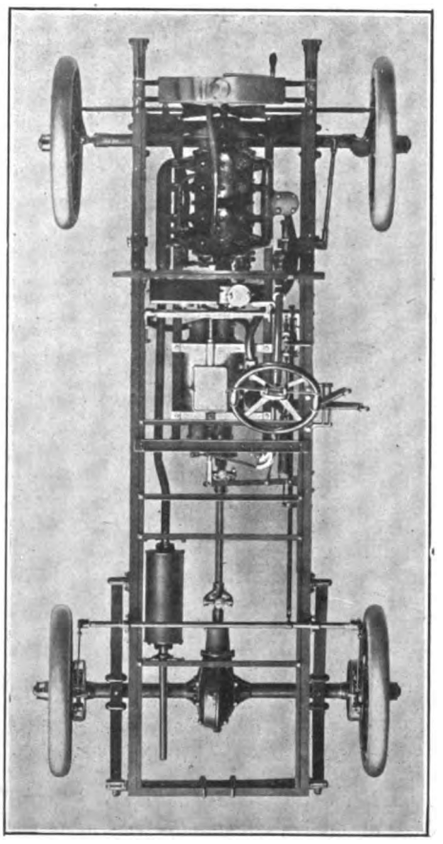


Among the concerns known to be preparing to launch a four cylinder car in 1905 was the Autocar Co., Ardmore, Pa. The reputation of the Pennsylvania concern for clever designs and sound and ingenious construction is such that an exceptionally fine creation was confidently expected, and the accompanying illustration makes it clear that, so far as appearance goes, this expectation has been quite fulfilled. The mechanical excellence of the car becomes apparent as it is examined in detail.

This four cylinder car, which is styled Type XI, will constitute one of three Autocar models that will be marketed in 1905. The two companion vehicles are models that have been marketed this year, viz., Type X, the two passenger runabout, at $900, and Type VIII, the four passenger tonneau listing at $1,400. The latter are offered in an unchanged form, their remarkable success during the last season having demonstrated conclusively that they would prove almost equally popular in 1905.

The Type XI Autocar is a contribution to that rapidly growing class of medium powered and priced cars that have of late become a marked feature of the American industry. They mark the acceptance by American makers of the European theory of design—a car driven by a four cylinder vertical engine, placed in front under a bonnet and transmitting the power preferably through sliding gears and either a propeller shaft and bevel gear to a live rear axle, or by double chains direct to the rear wheels. In the case of the Autocar, it is the shaft and gear drive type of transmission that is used. At the same time the European design has not been slavishly copied; there are many evidences of the originality and ingenuity that have always distinguished Autocar product. The rated horsepower of Tyxe XI is 16—20, the weight 1,900 pounds, the price $2,000. The body is of the popular side entrance type, with tonneau in the rear, the latter designed to carry three passengers or a total of five. Deliveries will begin to be made January 16

The chassis consists of an armored wood frame—a pressed steel section with a wood lining—mounted on semi-elliptic front springs 34 inches long and 2 inches wide, and on rear platform springs, consisting of side springs 35x2 inches and a rear spring 54x2 inches. The whole is imposed on four twelve spoke Mi lgely steel wheels, 30 inches in diameter. These wheels are fitted with 3½-inch Fisk heavy tires. The wheel base is 96 inches and the tread 54 inches. This combination makes an unusually comfortable riding car, peculiarly adapted for use on rough roads.



AUTOCAR CHASSIS.

The front axle is of 2¼-inch steel tubing, while the live rear axle is made of 1⅜-inch solid steel, with squared ends at the wheels obviating the use of keys. The rear axle case, which contains the bevel gear differential, is in three parts, bolted together, the top portion being removable so that the entire case and gears are visible and accesible.

The power plant consists of a four-cylinder vertical engine, water cooled, placed in front under a hood. The cylinders are cast in pairs and have a 3½-inch bore and a 4-inch stroke. The inlet and exhaust valves are mechanically operated and interchangeable. All valve gears are encased. The long engine bearings are bolted to the upper half of the crank case, the lower half being removable without interfering with the bearings. Lubrication is by splash and continuous force feed from a gear-driven oil pump. Engine and transmission are on the same pressed steel cradle, and protected by a motor shield.

Three speeds forward and reverse are given by the well known Autocar type of sliding gears, the latter being strong and having very broad faces; they are cut from drop forged steel, hardened, and the shafts are carried on generous sized roller bearings. From these sliding gears a propeller shaft and bevel gear drive transmits the power to the live rear axle.

On each hub is a band brake, and on the driving shaft at the rear of the transmission case is the emergency brake. A foot lever

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controls the hub brakes, a side hand lever the emergency brake. The first effect of moving the emergency brake lever is to throw out the clutch, the emergency brake and clutch being interlocked.

The control is on the right hand side of the car. A wheel steer is used with bevel gear and sector. The spark and throttle control handles are in the rim of the wheel. A foot operated clutch is used, and the clutch pedal is controlled by the left foot. When it is desired to hold the clutch disengaged, a clutch holdout may be operated by moving the foot slightly to one side of the pedal so as to remove the foot pressure from the clutch holdout button, and the car left standing without having to shift the gears to their neutral position. This clutch holdout is instantly released when it is desired to again start the car by simply pressing the foot on the clutch pedal as a whole.

Unusually large radiating surface is secured by a special coil radiator, with horizontal tubes and fins placed above the frame. Back of the radiator is a fan, around which is no housing to interfere with the natural draft produced by the car in motion.

A single vaporiser of the float feed type, the Autocar Co.'s own design, is used.

The ignition apparatus consists of two batteries of dry cells wired to a four-point coil with gear driven, spark timer mounted on the dashboard and in full view of the operator. Ignition is by jump spark.

All cardan cross caps, dust caps on transmission case and other similar parts requiring locking, are held in position by an ingenious spring pin, that cannot work out, become loose, shear off or break. Each cardan cross cap is also clamped by a bolt to the yoke.

Only a few minor parts are oiled directly. The engine is lubricated by splash and continuous force feed of oil by a gear driven oil pump. Transmission and rear drive are oiled by splash lubrication.

Large bearings, designed to run with a minimum friction, are everywhere fitted. The engine bearings, for example, being from 3 inches to 3½ inches. The engine, steering knuckles and steering posts have bushings, while the transmission, rear drive and rear and front wheels have roller bearings.

The equipment consists of two front oil lamps, one tail oil lamp, horn, tire repair outfit and tools and storm apron.

Car for St. Louis's Fire Chief.

St. Louis, Mo., has voted $2,000 for the purchase of an automobile for the use of Charles E. Swingley, the chief of its fire department. The fact that the city is spread over a wide area, being six miles wide and having a river front of about twenty miles, and that several long runs had ruined the chief's horses, influenced the City Fathers in authorizing the purchase. The police department of St. Louis has had an automobile patrol wagon in use for some six months.

BENNETT RULES UNCHANGED

Cup Commission Votes Down Proposed Alterations but Defines Light and Heavy Cars.

After all the talk about changes in the rules governing the Bennett Cup race, it has been decided to conduct it, in 1905 at any rate, without change of any kind. This conclusion was reached on December 12, when the International Commission, to which had been intrusted the management of the Bennett Cup race, met in conference at the headquarters of the Automobile Club of France, in Paris. Eighteen delegates attended, France being represented by Baron de Zuylen, the Marquis de Dion and the Chevalier Rene de Knyff.

The broad lines on which the next cup race will be arranged were decided. The conference agreed that the race shall be run under the same regulations as last year. The proposals for reducing the weight-limit of cars, for a team contest, for a two days' race over 1,000 kilometres, and for allowing only a fixed number of tires and covers to competitors, were discarded. It was decided that the great annual contest shall always be held in the last week of June, or as nearly as possible to that date.

The contest of next June will be competed for under exactly the same regulations as before. The suggestion of a two-days' race over double the distance was impracticable, while the reduction of the weight limit would have increased the danger of the contest.

Other decisions arrived at by the conference were that henceforth only one club in every country will be officially recognized, that in future danger and caution signals shall be blue and yellow, instead of red and green (the German Government have prohibited the latter colors because of their use on railways), and that due notice of all exhibitions and sporting events shall be given by each club to all the others to avoid clashing.

After discussion, the classification of cars by weight already established was officially adopted for all countries save Belgium, which accepted it only provisionally. Henceforth, accordingly, the term "car" will invariably mean a car weighing over 650 kilos. (1,432 pounds), and a "light car" one under that figure, while the limit for motor-cycles is fixed at 50 kilos. (110.23 pounds). The rule of a 7 kilos. (15.4 pounds) in favor of cars and 3 kilos. (6 pounds 9¾ ounces) for motorcycles when magnetos are used instead of accumulators, will now be ocfiiially binding in all contests.

A proposal to appoint an international committee for all sporting events was shelved, and another to create an international sign to be carried on motor cars for the purpose of identifying lawbreakers was dropped as being impracticable.

Questions relating to customs formalities were discussed, but nothing was agreed to.

Preparing for Bennett Cup Race.

Notwithstanding the talk of the limits of power and speed having been reached in the races of the past, makers are preparing for the 1905 Bennett Cup race cars that will far exceed in the respects mentioned any cars yet produced. France, Germany and England are the leaders in this movement, nearly half a hundred cars being under way in the first named country alone. Few of the cup cars will be rated at less than 100, and some of them will go as high as 150 H. P.

Following are the firms which are so far reported as definitely building cup cars, together with the number of cars and their horsepower:

Makers.	Cars.	H.P.
Richard Brasier	3	110
Mors	3	130
De Dietrich	3	120
Darracq	3	140
Gobron-Brillie	3	150
Renault	3	90
La Buire	2	120
Rochet-Schneider	2	120
Panhard	3	120
Turcat-Mery	3	120
Bayard-Clement	3	120
Hotchkiss	3	150
Gardner-Serpollet	3	—
Delaunay-Belleville	2	120
Berliet	2	130
Boyer	2	120

The question of the nationality of the drivers has now cropped up in France in several quarters. In all probability foreign drivers will only be permitted to drive in the French Eliminating Trials, provided they have been resident on French soil for not less than two years immediately preceding the date of this trial. From the commencement it has been strenuously urged that it should be imperative that drivers in the cup race should be of the same nationality as the cars which they drive. In any case it is suggested in France that any driver who is entered for driving a cup car in the Eliminating Trials for any other country should not be allowed to drive in the French Eliminating Trials.

For the English Selection Trials four makers have announced their intention of competing, viz., Napier, Wolseley, Siddeley and Star. For these trials an entrance fee of $500 must be paid, which is under no circumstances returnable. Beyond this fee a deposit of $500 must be made as a guarantee of compliance with the regulations of the A. C. G. B. I., this fee being returnable under certain conditions after the winner of the 1905 race has been declared. Entries and fees must be received before noon, December 31. In the event of the car presented for examination to the races committee being found not to be a bona fide racing car, the $500 deposit may be forfeited, as also in the event of an entered car not being at the starting point ready to start for the race, or following disqualification of a car by the International Commission.

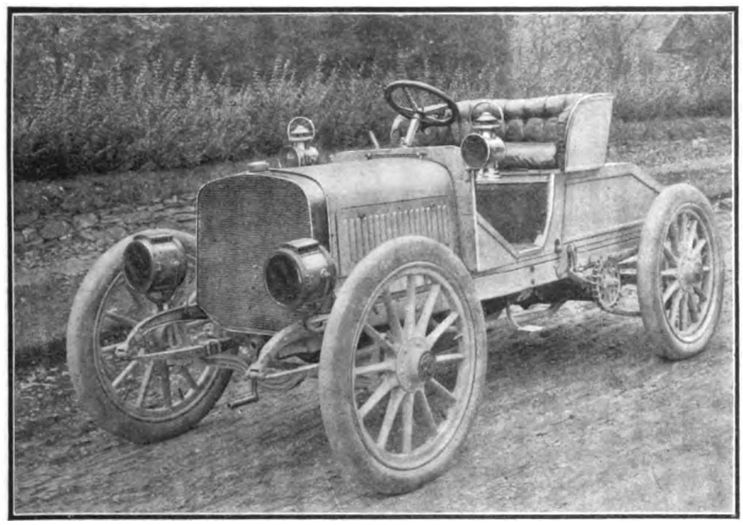
The number of automobiles in use in Belgium has progressed by large strides. In December, 1901, there were 1,332 cars; in 1902 the number had increased to 1,991, and in 1903 there were 2,618. This year the licenses show 3,698, which is 2,366 more than in 1901. These figures do not include motorcycles, of which there are considerably over four thousand.

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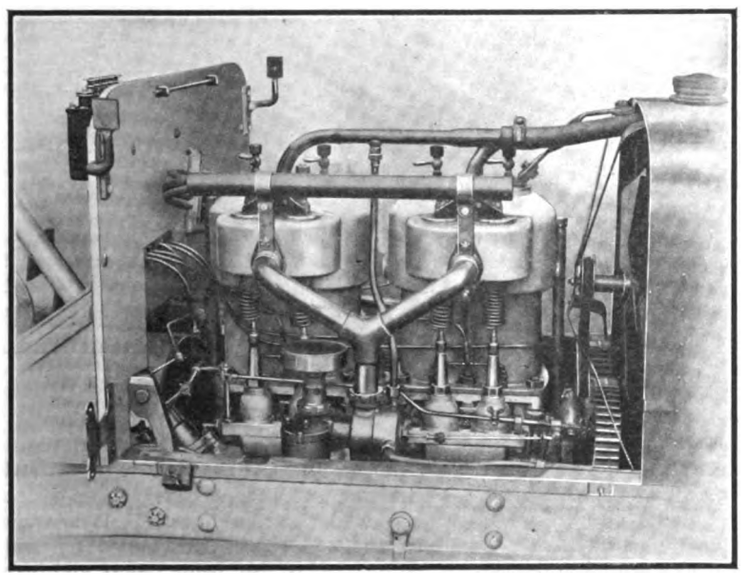
LOZIER'S CAR READY

Proves to be an Attractive Creation, Showing Skill and Close Study of the Subject.

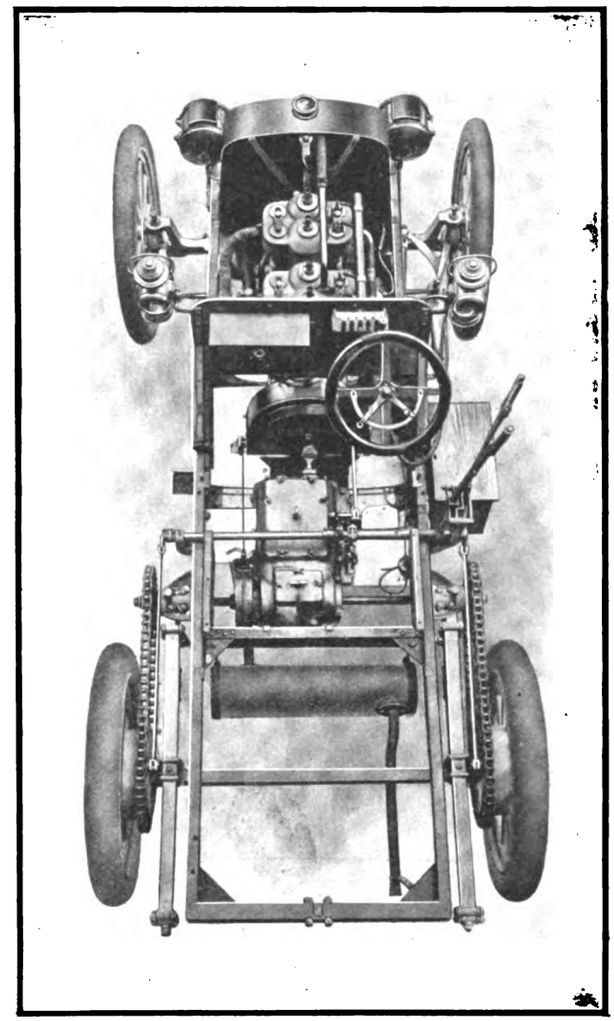
After twenty-three months of trial and preparation, the Lozier automobile is now ready for uncovering. As the Motor World forecasted, it is a 30—35 horsepower touring car, and in every way worthy of its name; it reflects the skill and long experience of its makers, the Lozier Motor Co., New York, whose gas engines and motor boats are well known to the world.



LOZIER CAR WITH TESTING BODY.



INLET SIDE OF LOZIER ENGINE.



PLAN VIEW WITH GASOLINE TANK REMOVED.

The motor is of the vertical four cycle type, having four cylinders, cast in pairs, and bolted to an aluminum crank case.

The valves are mechanically actuated—inlet on one side and exhaust on the other—and are easily accessible by removing one nut and strap for each pair. Valves, springs and lifters are all interchangeable. Material of valves is a nickel-steel composition with low co-efficient of expansion, thus minimizing distortion. Area of valves and shape of ports are such as to insure easy entrance and exit for gases, thereby gaining in efficiency.

The cam shafts are direct driven (without intermediate gears), by steel pinion on crank shaft meshing in with large combination fibre and bronze gears—a noiseless and durable transmission.

The cams and valve lifters are inclosed in small chambers in communication with the main crank chamber, receiving splash lubricator therefrom. Readily removable aluminum covers afford an easy entrance to these chambers.

The crank shaft is made from mild open hearth steel forging—30 point carbon—with liberal sibe zearings. Crank pins are hardened and ground in a special machine built for this purpose, which is, so far as is known, the only machine of its kind in existence.

All reciprocating and rotating parts are as light as possible and perfectly balanced, insuring a quiet and smooth running machine.

Jump spark ignition is used in connection with a high tension magneto, or with storage batteries and induction coil, as desired.

Speed control is secured by spark and throttle levers accessibly located on the top of the steering wheel. The motor is fitted with an automatic carburetter.

Honeycomb radiator, with fan and gear driven centrifugal pump, make up the cooling system.

The clutch is of the leather cone type, with self-contained thrust, fitted with springs under leather to afford advantage of easy engagement. The clutch cone is easily removable for renewal of leather without disturbing the motor or gear case.

The flywheel is inclosed in an aluminum pan, which forms a connecting member between the motor and gear case, which, with an interediate shaft fitted with universal joints between engine and clutch and gear

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case, together with the manner of suspension, insure against cramping of bearings due to twisting of frame members.

The car has three speeds forward and one reverse. The direct drive is on the highest gear to cross sprocket shaft, with counter shaft in gear case idle. All speed changes are made with one lever, which it is impossible to move until the clutch is thrown out. Both shafts of the gear case are nickel steel and run in ball bearings. The gears are hardened and have teeth of 6-inch cut to a formula which gives a much stronger tooth outline than regularly used. The drive is by two chains to rear wheels from cross differential shaft, which runs in ball bearings.

There are two brakes. On differential shaft, a metal to metal brake applied by means of foot pedal; this brake has an easily renewable sheet brass shoe. Rear wheel brake is of the expanding type, disengages the clutch, being interconnected therewith. The emergency brake is not thus interconnected, which fact permits of using the motor (connected to low gear) as a brake, in addition to the emergency brake, in descending very steep hills. The chances for skidding are lessened on greasy downhill travelling when using the motor for brake alone.

The wheel base is 115½ inches for side entrance tonneau. The axles are of I-beam sections, made of nickel steel forgings. The springs are 38x1¾ front and 42½x2 rear. The wheels are 36-inch, with ball bearings front and rear; tires, 4½ inches.

The car is fitted with an aluminum body, and the upholstery and beauty of finish and equipment is in keeping with the general high class construction. The weight of the car complete is 2,500 pounds, and the price, approximately, $5,000, carrying according to style of body desired.

Beginning Made in Bogota.

"Last week the first automobile made its appearance upon the streets of Bogota, and the excitement was unparalleled," says Alban G. Snyder, American Consul General at that point, in a report dated October 24. "Crowds have blocked the highways for squares, rendering traffic almost impossible, and great interest has been aroused as to the possibilities that this mode of transportation may offer in the future.

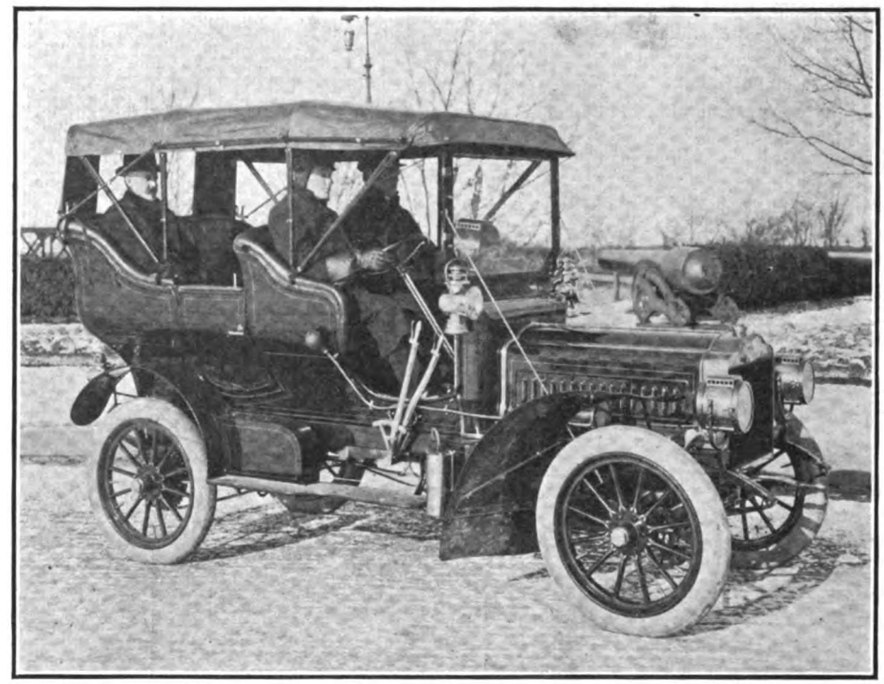
"This automobile is an American machine, and some business may result from the present enthusiasm. I shall be pleased to receive catalogues from automobile manufacturers of the United States for filing in the reading room here.

"It is rumored that a concession is shortly to be given to a transportation company for the exclusive use of the Camboa road, which leads from the upper Magdalena River to Bogota. Automobiles are to be used exclusively by this company."

Three Champaign, Ill., men, named Wallace, Gulick and Brown, have built an automobile and will test it in a few days. If it should prove successful, they expect to organize a company to undertake the manufacture of similar cars.

Sprague's Newest Top.

To their already great diversity of canopies and other carriage tops the Sprague Umbrella Co., Norwalk, Ohio, have added the extension top, here shown, as applied to a Thomas touring car. When the curtains are put on they inclose the car entirely, making it waterproof. Without removing any bolts or hooks, the top can be brought back and unhooked from the front seat and hooked in a receptacle on the back seat and folded there, making a complete dust shield; the bows fold snugly and lodge in a receptacle on the top of the back seat, where they are strapped in so that they cannot rattle or be shaken out. When this is done the glass front is stationary and forms a good wind break. By removing four bolts the canopy can be taken off the car in a few moments and replaced as soon, or by removing four bolts the whole top can be taken off the car, leaving nothing but the stubs, which are not unsightly or in the way.



SPRAGUE EXTENSION TOP APPLIED TO A THOMAS CAR.

Why Rims Merit Attention.

Motorists are inclined to be somewhat careless in many respects with regard to the rims to which the tire covers are attached. It often happens that after running on a deflated cover, or as the result of any slight accident, the rim gets knocked slightly out of shape, causing the edge of the rim to have a certain cutting action on the beaded edge of the cover. The rims, therefore, should be examined from time to time by jacking up the car and turning the wheel round, making a close examination of the edge of the rim in which the cover fits. By this means the slightest dent or malformation of the rim is immediately detected, and once discovered, it can be remedied in the following manner:

If the edge has been knocked down or flattened, it is rather difficult for an amateur to conveniently repair it himself, but generally a competent blacksmith can put it right, with the aid of a pair of tongs. On the contrary, if the damage arise from slight bulges, they can be removed by means of a small hammer carefully used in order to prevent denting in the rim.

It must not be overlooked that these little attentions remove the paint from the rim, and it is therefore necessary afterwards to give the parts operated upon two or three coats of paint and varnish, as an unpainted or badly painted rim will soon rust, and a rusty rim will spoil more covers than anything else.

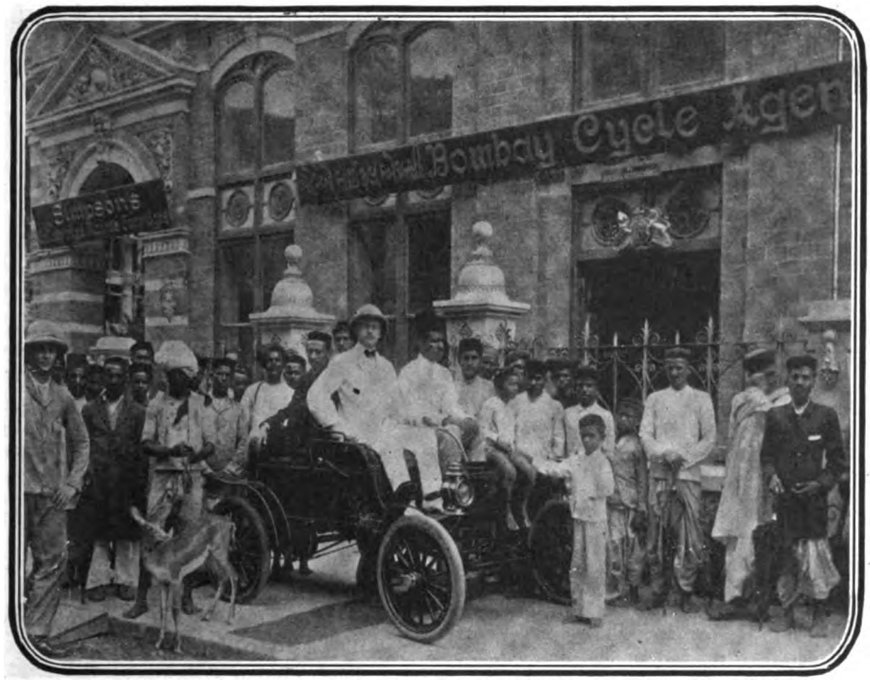
First of New Studebakers Arrives.

At the local Studebaker establishment, at Broadway and Forty-eighth street, the first of the 1905 models has been received, and is attracting attention because of its graceful and quietly elegant lines. It is a victoria phaeton, and especially adapted for ladies' and physicians' use, being roomy and luxurious and so designed that easy ingress and egress are afforded.

The vehicle is designed to carry any type of battery, sliding partitions being fitted so they can be shifted according to whether cells of the Exide or the Edison types—the latter requiring more room—are used. An uncommonly good effect is obtained by the disposal of part of the battery in front under a bonnet; the remaining cells are carried in the rear of the body. The vehicle has a mileage capacity of forty to forty-five miles

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The Automobile in India.



SCENE IN FRONT OF THE OLDS AGENCY IN BOMBAY.

For the Instruction of Providence.

So succesful was the experimental course in automobile construction conducted at Providence, R. I., by the local Y. M. C. A. last spring that it will be repeated this winter. It will open January 10, with Parker H. Kemble, superintendent of the Boston automobile school, in charge. He will be assisted by two experts on gasolene and steam engines, who are also giving instruction in the Boston school.

A series of lectures, open to ladies and gentlemen, dealing with the fundamental principles of the various types of cars, their operation, adjustment and care, are also to be given by Professor Kemble.

A shop course will be given Wednesday and Friday evenings of each week, under the direction of F. P. Barker, chief draughtsman of the Waltham Mfg Co., on gasolene engines, and instruction on steam machines will be by E. J. Loring, a well known automobile engineer.

Crawhez Gives a Cup.

The well-known Belgian motorist, the Baron Pierre de Crawhez, is presenting an international cup to be competed for by automobile manufacturers. The contest will be over a distance of 500 kilometres, and will be for both speed and reliability. Each firm entering the competition will have to send a team of three cars, and marks will be allotted in accordance with the order of arrival at the finish. The firm securing the least number of points will hold the cup for a year. The cars not completing the whole distance will be credited with as many marks as competitors, plus one.

Elected George, but he's in Doubt.

At a meeting last week E. S. George was elected to the presidency of the Detroit Automobile Club. The retiring president, F. O. Paige, refused a renomination owing to his inability to devote sufficient attention to the office on account of business pressure. Although Mr. George appreciated the honor, he declared it improbable that he could accept the office, but the members are of the opinion that he can be induced to act in the capacity.

Will Canvass for Members.

Heroic measures are to be adopted by the Kansas City (Mo.) Automobile Club to increase its membership. A solicitor is to be employed, who will endeavor to get all the motorists in the city to join the organization, the initiation fee being suspended while the canvass for new members is being conducted. At a recent meeting the members talked over plans for a clubhouse, and it is probable that a suburban location will be secured in the spring.

Seven Hundred Increase in Quaker City.

During the last eleven months 2,340 licenses have been issued in Philadelphia, while only 1,663 were called for during all of 1903, which is an augmentation of 700. It is possible that more licenses would have been issued by the municipal authorities, but a mistake occurred. This forced a number of persons to go to other counties for the tags, which are good in all parts of the State.

No Motorphobia in Kearney.

Kearney, Neb., apparently is filled with the spirit of fairness and progressiveness. As evidence, drivers of all vehicles, bicycles and tricycles excepted, are included with automobilists in the new speed ordinance passed by the City Council of that place at its meeting last week. The regulation provides for a speed of twelve miles an hour in the outlying parts of the city and for eight miles an hour on Central avenue, Aveune A, First avenue and the intersecting streets between Fifteenth and Twenty-sixth streets. In turning corners in the latter district five miles an hour is the highest speed allowed. Violators of the ordinance are liable to arrest and fine of not more than $100 or imprisonment not to exceed thirty days.

All of the members of the Council voted in favor of the ordinance except Councilman Bolte. He was in favor of limiting the territory to which the ordinance should apply to a zone extending nine blocks on each side of Central avenue. He gave it as his opinion that after that part of the city had been passed that all danger from a higher speed was eliminated. He thought if an attempt were made to regulate the speed in all parts of the city that the ordinance would be constantly violated. He said he was not in favor of an ordinance which would make lawbreakers of the people.

Alleged Thief's Long Drive.

W. H. Cunningham and wife, of Independence, Kan., are in limbo in Topeka, where they are facing a charge of stealing the automobile in which they travelled from the Kansas capital to Collinsville, Ill.

The machine is valued at $2,500. Cunningham and his wife were arrested at Lima, Ohio, to which place they went after leaving the automobile at Collinsville to be repaired. The couple say they were on their way to New York. Cunningham alleged that he had borrowed the car from Charles Woodward, of Topeka, for the trip. Mrs. Cunningham claims not to know how her husband had secured it. It was through a letter to Topeka friends describing their journey that the couple were traced.

No Novices Wanted in Butte County.

The grand jury which has recently been in session at Oroville, Butte county, California, has drawn up a somewhat remarkable automobile ordinance. One of its provisions is that no one shall drive an automobile on the public highways of Butte county unless he has had at least three months' experience with automobiles. The automobilist must also have a permit from the County Clerk, and must not drive faster than twenty miles an hour. When nearing anyone on a public highway who is leading or driving animals, the automobilist must reduce his rate of speed to three miles an hour, and if the animals are frightened, he must stop until they pass.

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Endangered Mrs. Predmore's Maltese Cat.

The following choice bit of literature was furnished a Lakewood, N. J., paper by a Barnegat correspondent, who evidently has a bad case of "mixed metaphoritis":

"Fast driving of automobiles through our town is becoming a matter of daily occurrence. Somebody will yet be injured or killed. Our authorities should take some action to prevent this and stop the reckless riding; or will they wait, as usual, until the horse is stolen before they lock the stable door?"

The same rural correspondent several years ago contributed this, on the occasion of a motor cycle passing through the village one Sunday afternoon:

"One of those nefarious contraptions of the devil passed through our city last Sunday afternoon, disturbing the religious services of the Methodist Sunday school, which was in progress. It is believed the thing was a motor bicycle, but it went so outrageously fast that none of our residents could tell the nature of the beast. A demon, arrayed with goggles and leggins, was sitting on the machine, and he seemed to have little regard for the town's safety, going as fast as he could. Why, he actually came near running over Mrs. Predmore's handsome Maltese cat. We thought when bicycles made their appearance our lives were in danger, but now it is worse. The bleary goggle-eyed monsters go about seeking whom they might devour."

All the Rajahs Gave Prizes.

The Delhi-Bombay reliability trials, under the distinguished patronage of Lord Curzon and Lord Kitchener, as is known, will be held from December 26, 1904, to January 2, 1905.

The following is the official programme for this interesting contest: First day, Delhi to Agra, 133 miles; second day, Agra to Gwalior, 73 miles; third day, Gwalior to Goona, 130 miles; fourth day, Goona to Maksi, 128 miles; fifth day, Maksi to Khul Ghat, 96 miles; sixth day, Khul Ghat to Dhulia, 110 miles; seventh day, Dhulia to Igatpuri, 126 miles, and last day, Igatpuri to Bombay, 85 miles.

The prizes, and more especially their donors, are of more than usual interest. They are as follows: A cup of the value of $500, presented by H. H. the Gaikwar of Baroda for the most reliable car; a cup of the value of $250, presented by H. H. the Maharajah Cindia of Gwalior for the most economical car; a cup of the value of $250, presented by H. H. the Maharajah of Mysore for the car in the best condition after the trial; a cup of the value of $125, presented by H. H. the Maharajah of Kapurthala for the car best suited to district work in India; a $250 cup, presented by Messrs. Jeremiah Lyon & Co., of London, for the car making the best performance as regards reliabilitly and costing not more than $2,500 as landed in India; a consolation prize by the proprietors of the Times of India, value $125.

Interest Increasing in Hawaii.

Even the Hawaiian Islands are not free from the vexations of automobile speeding, as the following extract from an editorial in the Honolulu "Bulletin" will show:

"Honolulu is just getting its hand in as a tourist town, also as an automobile town. Photographs of the first automobile parade that was a thing of real beauty have been sent abroad primarily 'for tourists.' Following close on its heels comes the arrest of a tourist for 'fast and furious' driving. Perhaps the tourist likes it. Possibly more will come, finding they can enjoy the arresting fad here, as elsewhere. Whether more tourists come or more are frightened away, the community must reach a decision on some points this incident naturally suggests.

"On the other hand, is the question of arrests, determination of what constitutes scorching, to be vested in the discriminating capacity of an intelligent Honolulu policeman? Are automobiles to be held down to the staid and admittedly peaceful gait of the historic missionary family horse, with the policeman to pass personal judgment on whether the automobilist shall go direct where he started for or take a side trip to the police station that his name may be registered? We have no municipal regulations because we have no municipality, and one officious policeman can head on fifty tourists and all they represent to the town.

"With these facts in mind it is well to have a care that the town shall not unnecessarily make a fool of itself."

When Cab and Car Stuck Fast.

An automobile and a hansom cab stuck together was an amusing sight on Twenty-third street, New York, the other day. The cab was waiting for the fare, who was making purchases, and the automobile just behind had slowed up to the curb. The horse started backwards and the rear wheels became fastened to the hood of the automobile. Spectators and police tried to separate the two vehicles, but all attempts to do so were futile. Finally, acting on the suggestion of a bystander, the horse was unharnessed and the cab driver descended from his perch, and through lowering the back part of the cab the two vehicles were separated. In the meantime the lady who had hired the cab appeared and, without knowing who was to blame, accused the policeman of favoring the "rich" automobilist, and insisted on the cab driver examining his vehicle to ascertain whether any damage had been done. Reprimanding the police for their favoritism in the accident, she compelled both parties to give their names for a few cents worth of paint which had been scratched off the cab. Both automobilist and police sergeant smiled as the cab drove away.

Seventy-five automobiles have been assessed for taxation by the Tax Commissioner of Omaha, Neb. It is thought that about a dozen more cars will be rounded up before the job is ended.

For Making Light of the Law.

Recently American residents in Paris were thrown into consternation by reading that a prominent young society woman had been imprisoned for five days without the option of a fine. The cause for this drastic action on the part of the court was something in the nature of "Lese Majeste." It appears that she entered the Bois in her car after dark, when her attention was called by a policeman to the omission of rear lights. Scarcely reprimanded for this breach of the law her American ire was aroused, and to revenge herself on the following night she passed the same spot and the same officer of the law with her machine profusely decorated with Chinese lanterns. Noticing this and recognizing her as the woman he had spoken to on the previous night, the official compelled her to at once accompany him to the nearest police station. The magistrate would listen to no excuse for literally making light of the law, and sentenced her to confinement in a room in the building for five days.

The Story of "Sis's" Press Agent.

"Sis Hopkins," who in everyday life is known as Rose Melville, is a motorist of more than common note. She owns a "$5,000 machine," and has aspirations to become a racing chauffeuse. As a preliminary, she has invited Barney Oldfield to race. "Sis" is also a consistent, not to say persistent, user of the motor car. When this season's tour was arranged Miss Melville had a new steel trucked baggage car constructed to hold her automobile as well as the "Sis Hopkins" scenery. A special compartment was built for the automobile, and also berths for two attendants. The automobile compartment has its own entrance and a runway. Whenever the actress arrives in a city or town where she is to play the attendants have the machine in readiness to slide down the runway. As soon as the train stops Miss Melville is speeding off to her hotel and then takes a spin over the surrounding country before going to the theatre. At least, this is the press agent's story of the contrivance.

Motoring as a Cure for Asthma.

The automobile as a cure for asthma and other throat troubles is its newest virtue. George P. Braun, of Chicago, is the gentleman who subscribes to this belief. For several years both Mr. Braun and his daughter were compelled to go South immediately cold weather set in because of asthmatic affections. This year, however, he purchased a Locomobile, and as winter has not brought a return of their troubles, he attributes it entirely to the use of the car.

The Kaiser Will be Heralded.

Automobiles belonging to the Kaiser will be easily distinguishable, even at a distance, from the ordinary ruck by their signals, as a bugler sits on the front seat next to the driver, and uses an instrument which is very like the trumpets of the mediæval heralds. Even the little banner attached to these old-time trumpets is to be replaced on the bugles in the imperial motor stables.

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STATE LAW IS NO GOOD

Any Little Community May Over-ride it Says the Wise Judge Orlady.

In affirming the decision of a lower court, which fined Samuel Bell, Jr., a Philadelphia motorist, Judge Orlady, of the Pennsylvania Supreme Court, holds, in effect, that a township can override the law of the State in the endeavor to prescribe a reasonable speed limit. The decision is of considerable importance in its bearing on the whole question of automobile legislation, and if it is not reversed will leave Pennsylvania motorists at the mercy of the legislators of townships and villages. It is directly opposed to the theory of uniform regulations throughout the State, which the 1903 law was supposed to establish. Already it is predicted that the decision will be followed by speed regulations for automobiles in all the principal townships of the Commonwealth.

The case decided by Judge Orlady was that of Samuel Bell, Jr., a member of the Automobile Club of Philadelphia, against Radnor Township, Delaware County. Radnor Township has an ordinance that limits the speed of automobiles to ten miles an hour. Bell was arrested for travelling more than ten miles an hour and fined. Bell took an appeal from the fine, but the appeal was dismissed by Judge Johnson, of Delaware County.

Bell then took the case to the Superior Court, maintaining that Judge Johnson's decision was opposed to an act passed by the Legislature in 1903, fixing the speed of automobiles at eight miles an hour in cities and boroughs, but permitting a speed of twenty miles an hour outside city and borough limits. Judge Orlady, in affirming the decision of the Delaware County Court, says:

"The State Legislature has, beyond question, the power to provide for the construction and maintenance of the public highway, whether streets in cities or boroughs, or roads in townships, and it has as full and clear power to provide regulations for their use. It must also be conceded that this power may be delegated without diminution to a local municipality. A municipal corporation has for its object the interests, advantage and convenience of the locality and its people. It is a local government possessing powers of legislation, within its delegated or reasonably implied powers, and is charged with the general welfare of the people.

"Some of the townships of the first class represent a larger population and their highways are more used than those of many boroughs. We are not prepared to say that an ordinance limiting the speed of an automobile to ten miles an hour is unreasonable when a lower rate of speed is prohibited by the Legislature in less densely settled communities. The commissioners are prima facie the best judges of what is a reasonable speed for such a vehicle in Radnor Township. No special fact is suggested in this record to show that ten miles an hour is not a reasonable limitation, nor that sixteen miles an hour—the rate at which the defendant was going when arrested—is unreasonable."

Wilmarth Now Long Island's Presid nt.

The Long Island Automobile Club dinner, held on Wednesday, was attended by eighty-two members. The affair was the first function held in the club's new house, in Cumberland street, Brooklyn.

There was no opposition to the regular ticket, which was elected by acclamation, as follows: President, Alfred Wilmarth; vice-president, Augustus A. Post; secretary, Frank L. Evans, and treasurer, Raymond Healy; governors, for one year, Frank G. Webb, Laurence Abraham and Dr. F. M. Sharp; for two years, A. R. Pardington, L. R. Adams and Z. N. Allen; membership committee, Edwin Melvin and F. B. Stephenson.

At the dinner which followed the meeting W. P. Richardson was toastmaster, and the speakers included Frank G. Webb, the retiring president; Alfred Wilmarth, the incoming president; L. R. Adams, A. R. Pardington and A. A. Post.

The secretary's report showed 123 members in good standing. In connection with the clubhouse is a garage with storage accommodation for twenty-nine machines, and all the space has been taken. The club has bought land adjoining, upon which it will erect an addition to its building, which will more than double the storage facilities.

The clubhouse is situated near Fulton street and also near the new Atlantic avenue boulevard, thus affording members easy access to one of the main routes of Long Island.

"Non-Stop" in South Africa.

A few years ago it was a case of going to the front, meaning South Africa; at present that continent is coming to the front in organizing contests for automobiles. One hundred miles reliability non-stop trials have been arranged for the purpose of testing the ability of the various makes of cars to negotiate the different, steep and awkward roads. Speed is a minor factor in these trials, and will not count at all in the awarding of the certificates, the Automobile Club of South Africa being averse to fast driving. Particular attention will be paid to the power of the engines to keep cool in making the steep ascents. The higher powered cars are, of course, more subject to overheating than the smaller, and efforts to meet this difficulty are being made by some motor agents on the spot by fitting the cars with an additional water cooling tank.

A reverse of conditions is shown recently in Turin, when the Princess Loetitia's magnificent automobile was run down by an artless cabman. The car was damaged considerably, and both chauffeur and coachman received injuries. The former, it is said, will only receive fifteen days—in the hospital, though he was wholly to blame for the accident.

GOOD ROAD TO NEWARK

Or Rather There Is Promise of One—The Plans of the Improvement.

Motorists who have dreaded the short trip between Jersey City and Newark, N. J., on account of the wretched condition of the only two roads between the cities, will be glad to know that a plan is being considered to improve one of the roads. The plan contemplates the abolishment of the Plank Road across the meadows, and the building of a concrete and granite highway to be 100 feet wide. The plans have been drawn by the county engineers of Essex and Hudson counties, and it is thought that they will be approved at the next meeting of the Joint Bridge Commission, composed of members of the two Boards of Freeholders.

The present roadway is from 22 to 24 feet in width, not including the trolley tracks, which run at each side. The estimated cost of the improvement is placed at $1,000,000. The land needed for the extra width has been offered by the Hackensack Meadows Company to each of the counties for a consideration of $1. As soon as the contract for the construction of the road has been officially awarded, the Meadows Company will transfer the land to the two counties. As the present surface of planking will be torn up, a new title will have to be found for the road, and it has been suggested that it be called the Essex and Hudson Boulevard.

According to the plans, the road will be widened from the point where it abutts on the pavement in Newark to the end of the present Plank Road in Jersey City. The engineers' drawings provide for the location of a double line of car tracks in the centre and roadways at each side, with sidewalks on the outer edges. The tracks will occupy a space of twenty feet, and there will be trolley poles in the centre between the tracks to carry the wires. The trolley company has assured the Freeholders that it will plant sod or grass seed between the ties, so as to catch the dust raised by the cars.

There will be a curb at each side of the tracks to keep wagons off and at intervals of 500 feet there will be openings, so that the road can be easily repaired when necessary. There will be sections of curbing, or bars, however, which will be put up when the opeings are not in use by road repairers, so that wagons cannot cross the tracks.

The roadways at each side of the tracks will each be 28 feet wide, and the sidewalks will be 12 feet wide. The trolley tracks will form the crown of the road, and there will be a gradual slope on either side to the walks. There will be a bed of concrete, which will support granite blocks on each roadway. A series of sewer pipes draining into the Passaic and Hackensack rivers will run beneath the sidewalks.

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To Test Tension of Valve Springs.

It has been said that the liability of valve springs to variation of tension constitutes an important objection to automatic valves, in that one valve may from this cause open sooner than another, and thereby destroy the equilibrium of the engine. With valves of large opening this objection would scarcely apply, because with the greater freedom of intake the cylinders could make up towards the end of the suction stroke what they lacked at the beginning of it. In this way balance would tend to keep established. Moreover, it is an easy matter to test the tension of the springs of automatic valves, and replace any spring which has grown weak through overheating or other causes. One of the best methods of verifying uniformity of tension consists of, first, removing the valves complete. Holding one in each hand by the seating, the extremities of the stems then should be placed together so that the stems are in a straight line. A slight pressure of one hand towards the other will then cause the two valves to open synchronously if the springs are of equal tension and in order.

Good Results from New Carburetter.

Some marvellous results have been attained by the Olds Motor Works through the adoption of a new carburetter of their own manufacture, which will be fitted to all the 1905 standard runabouts (the curved dash model). The carburetter is of the float feed type and replaces the mixer previously used. Its use is said to have enabled the engine to deliver an increase of power over the 7-horse—the rated power of the standard runabout—an increase that has reached as high as 10 per cent. so efficacious is the mixture delivered to the combustion chamber by it. So much pleased are the Olds people with the device that it may be used on some of the other models.

New Features of the Mercedes.

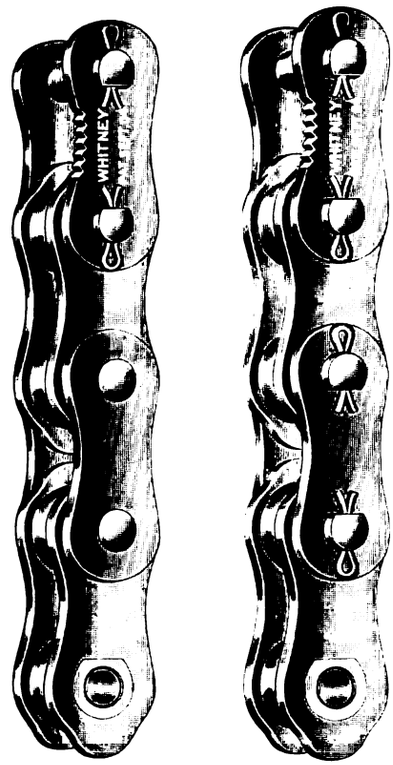
One of the features of the 1905 Mercedes car, which was exhibited at Paris during the show, is a "perpetual sprag." This is a kind of ratchet and pawl which immediately comes into operation on the automobile showing a tendency to go backward on a hill. It is only released when the reversing lever is operated. Another distinguishing feature is that the gas is cut down when the clutch is thrown out by a lever working mechanically in connection with the pedal.

Motor Car Replaces Locomotive.

"Automobiles are cheaper and more practical" is the decision of the owners of the Silberton Northern Road of Denver, Col. For this reason they have authorized the purchase of a gasolene automobile coach to run on the tracks to carry miners to work at change of shifts. The car will accommodate about forty persons, and will cover sixteen miles in forty five minutes, at a fraction of the expense of operating a locomotive and passenger coach.

How Chains have been Improved.

In the new Whitney chains, here illustrated, there is one feature that will appeal alike to those who sell and those who use them, and which has not before been emphasized, i. e., their interchangeability. The riveted parts may be used in the cotter detachable chain or the detachable parts in the riveted chain. It simplifies matters not



a little, and considerably lessens the stock that must be kept on hand.

These chains are now being made with projecting inside links—a foreign idea that the Whitney people have cleverly adapted. The chains are also being furnished with special bronze cotter pins instead of the steel ones previously employed. Those of bronze are not only extremely tough, but, what is as important, they will not corrode, and therefore are always and despite all weathers easily removed.

Toledo Dealer's Useful Innovation.

The Litchie Automobile Co., Toledo, Ohio, have instituted a novel and meritorious special service that should meet with quick appreciation and even imitation in other cities—an "emergency service," as they aptly term it. It consists in keeping several inclosed cars always ready for instant duty for the use of doctors or nurses desiring to reach patients quickly. The cars respond to calls at any hour of the day or night.

How Hughes is Educating his Repairmen.

In order that they may acquire a thorough mechanical knowledge of the new models, Archie Hughes, manager of the Pope Mfg. Co.'s Providence, R. I., branch, has sent six of his best mechanics from the garage repair shop to the Pope-Toledo and other factories. The men left Providence last week, and will return early in the spring.

Memorable Good-bye to Deming.

To-morrow, Paul H. Deming, the manager of the White branch in New York, leaves that office preparatory to an indefinite stay abroad. His leaving was marked by a luncheon at the Hotel Astor on Thursday last, tendered in his honor by the White Sewing Machine Co. as a mark of their appreciation and by the presentation of a silver loving cup by his associates in the branch. Among those present at the luncheon were Winthrop E. Scarritt, Windsor T. White, Augustus Post, C. H. Gillette, Emerson Brooks, A. L. McMurtry and Harry Unwin. After the luncheon Mr. White made a few appropriate remarks, and introduced Carl H. Page, who for two years has been Mr. Deming's right hand man, and is to succeed him. Mr. Page presented the loving cup in the name of his associates.

Mr. Scarritt, who is becoming the Depew of the automobile world, was among the few speakers. He made a great hit when he compared the Mercedes to the Fifth avenue belle, bautiful to look upon and attracting the attention of every eye when she ventured forth in fine weather. But the stately belle must be petted and pampered, else there is trouble. The White, on the other hand, Mr. Scarritt compared to the country girl, glow-with robust health and going about her routine regardless of bad weather or other disturbing conditions.

Mr. Deming has been the manager of the White branch since its establishment in New York, and by quiet, effective work, and without the aid of skyrockets or brass bands, has done himself and his company proud. His successor, Carl Page, is of the same effective, obliging, likeable type.

Soap as Made by the Romans.

The fact that the Rome Soap Mfg. Co., Rome, N. Y., have added an "automobile soap" to their productions is a matter of more than passing moment. The concern is one with a big reputation, earned by the merit of their linseed oil soaps, and the best evidence of this merit is the Romans' offer to refund the purchase price if their soap proves not satisfactory. The virtue of linseed oil for cleaning and polishing glossy surfaces is well known, and it is not strange that it should be turned to use on automobiles. Rome soap is put up in pails for the benefit of those who desire a money-back trial, and in barrels and half barrels for the use of those garages that know it to be equal to its claims.

About Valve Grinding.

If there is any doubt as to the need for valve grinding, and automatic valves are in question, it is only necessary to pour a little gasolene into the seatings. If drops make their way through any one, then by all means grind them. The operation of grinding is described at length in many text-books, but it is generally omitted to mention that between every two or three turns of the valve head the latter should be lifted from its seat. This prevents particles of the emery powder adhering to one spot, and cutting rings upon the face opposed to it.

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TEST FOR TOURING CARS

British Club Formulates Rules Defining those Vehicles and Imposes Admirable Restrictions.

The commission appointed by the Automobile Club of Great Britain and Ireland have now issued the rules and regulations concerning the touring car race for the United Kingdom Cup. The resolutions that the special commission agreed on are that the trophy shall be put up for competition between May 1 and October 1 in each year, on a date to be fixed by the A. C. G. B. I., which is in future to be known as "The Club." The contest shall take the form of a race for touring cars, with a limited quantity of fuel. In each new race "The Club" will organize the event and recommend the place where it is to be held.

Cars may be entered by members of any recognized foreign automobile club, and of any automobile club or organization in the United Kingdom which is affiliated to the Club.

The distance of the race, including controls, shall be not less than 150 and not more than 250 miles.

The fuel to be used shall be provided by the club, and shall be petroleum spirit having a specific gravity of 0.695 to 0.705 at 60 degrees Fahrenheit. The allowance of petroleum spirit shall be determined by the Club according to the nature of the course selected and the conditions of road surface on the day of the race.

The allowance for the course selected shall be equivalent to an allowance of one gallon of petroleum spirit for every twenty-five miles of dry average road, the term "average road" signifying a course similar to the road from London to Oxford via Uxbridge, High Wycombe and Stokenchurch.

The car completing the course in the shortest time shall be the winner, subject to the compliance with these regulations.

The weight of the chassis shall be not less than 1,300 pounds nor more than 1,600 pounds. Accumulators and other ignition apparatus, the tires on the wheels, the bonnet, tanks (empty), dashboard, steps, lamp brackets and front mudguards shall be treated as part of the chassis. No ignition accumulators or magneto or other source of electric energy shall be carried except those fixed to the chassis at the time of weighing.

The load carried by the chassis, exclusive of fuel, oil and water, spare tires, spare parts, luggage and provisions, shall be not less than 950 pounds, including (1) the body with rear mud guards and their stays, floor boards and lamps; (2) the driver and one passenger, averaging not less than eleven stone each, and (3) not less than 300 pounds of loose ballast in the portion of the body in which the two unoccupied seats are situated.

The chassis shall have not less than four road wheels. The distance between the centres of the wheels on each axle (i. e., the track) shall not be less than 4 feet, and the distance between the centres of axles (i. e., the wheel base) shall not be less than 7 feet 6 inches. Efficient mud guards to the front wheels shall be fited to the chassis.

The body shall be of the ordinary touring type, properly upholstered, comfortably seated for driver and three passengers facing forward, two in front side by side and two behind side by side, on seats at least 34 inches from the ground, and giving for every two seats a clear seating space not less than 40 inches wide between cushions. Efficient mud guards to rear wheels shall be fitted to the body. The platform behind the dashboard shall not be less than 6 feet 6 inches long nor less than 30 inches wide.

Between the start and finish of the race the driver and his passenger shall alone be permitted in any way to assist a car, and no stores, supplies, spare parts or spare tires other than those actually on the car at the start shall be taken on to the car during the race. Everything (except fuel) which is on the car at the start must be carried throughout the race.

Not more than two cars by one manufacturer will be accepted. The Club reserves the right to refuse any entry, and to limit the number of acceptances as circumstances may require.

Every entry shall state the maker's selling price of the chassis, and shall be accompanied by a written guarantee by the manufacturer of the car to accept at the declared price all orders within one month after the race for exact duplicates of the chassis entered, and to deliver all such chassis so ordered complete and in perfect working order within a reasonable period from date of order, provided a cash deposit not exceeding one-third of the price of the chassis is paid at the time of giving the order. Should the manufacturer fail to comply with such guarantee, the name of such manufacturer may be struck or kept off the competitors' register, at the discretion of the Club, for such period as they think fit.

Every car shall be provided with fuel tanks capable of holding not less than twelve gallons.

The driver and one passenger shall be the only persons on the car during the race.

No fuel capable of being used for propulsion of the car question shall be carried on the car, except the fuel provided by the club.

It has been further recommended by the committee that the first race be held in the Isle of Man in September, 1905.

The Club have not up to the present procured the trophy, and a suggestion has been made that the members head a subscription list for a $500 cup in preference to having one donated.

There are seventy-nine automobile owners registered with the recorder of Nashville, Tenn.

ONE MAN REGIME IS OVER

Florida Association Takes a Hand in its Speed Carnival—Ormond no Longer Headquarters.

No longer is there a "sole American and foreign representative" of the Ormond-Daytona speed carnival. The former professional six-day cyclist who conceived himself to be that thing, and who carried the title on his stationery, has had a full awakening. As a result the entry blank which he rushed into print and circulated has been called in, the selected list of officials made up of men whom he had booked for the gratuities that go with the offices has been knocked awry, the particular hotel which he has boomed so industriously will not be official headquarters, and he himself will no longer be permitted to pose as the "whole thing."

It was all brought about so diplomatically at a meeting of the Florida East Coast Automobile Association that the ex-six-day "grinder" has not yet fully appreciated what happened to him. He was let down so gently that he does not know he is down, if not entirely out. He has, however, cast an anchor to windward by flirting with certain people in Cuba, where he is not so well known. He has induced the Cubans to open their highways for a series of road races or speed trials.

So far as the Florida carnival is concerned, however, there will be a revised entry blank issued this week, and C. H. Gillette, secretary of the A. A. A., and S. M. Butler, secretary of the A. C. A., will receive entries, either American or foreign, and Daytona and not Ormond will be the official headquarters of the Florida association.

Gave the Judge a Speedometer.

At the annual meeting of the Automobile Club of Buffalo, held last week, the retiring president, Judge William H. Hotchkiss, was presented with a speedometer-odometer as a token of the members' regard. The presentation was made by August H. Knoll, the newly elected executive. The other officers chosen are as follows: Vice-president, H. A. Meldrum; secretary, Dai H. Lewis; treasurer, Charles Clifton; members of board of governors, E. H. Butler, E. R. Thomas and W. H. Baker.

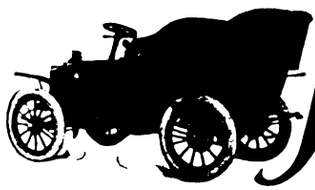
Rockford Clubmen Choose Officers.

The Rockford Automobile Club, of Rockford, Ill., held its annual election of officers last week, with this result: President, N. F. Thompson; vice-president, O. W. Johnson; secretary, H. W. Dickerman; treasurer, E. Scott. E. K. Barnes and D. L. Cutler were chosen directors, the latter succeeding himself and the former succeeding Fritz Ulrich.

Physician Heads Napa Club.

The Napa Automobile Club has been organized at Napa, Cal., and the following officers elected for the ensuing year: President, Dr. E. J. Hennessey, of Napa; vice-president, Dr. Osborne, of St. Helena; secretary, F. S. Jacks, of Napa; and treasurer, Burt Norton, of Napa.

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Auto-Talks
No. 3

In taking up the subject of performance in this "Auto-talk" we realize that our space is too limited to permit of thoroughly covering the subject. First, however, we will say that it is not our intention to offer as sole evidence of Autocar efficiency professional "records" or exhibition trials.

While the Autocar can show its share of these records, we believe that the average prospective purchaser is more interested in knowing the day-in-and-day-out behavior of the cars than in statements that they carried off such and such honors in such and such a contest. Following we print one of the many letters received from satisfied Autocar owners, because it tells of what was simply a private test of the car and in many respects an every-day trial.

WORCESTER, MASS., Sept. 24, 1904.

THE AUTOCAR COMPANY.

It may be of interest to you to know that I have just returned from a trip to Burlington, Vt., in an Autocar runabout, making the run in fourteen hours and twenty minutes, the distance being 236 miles over rough hilly country. In view of the fact that I had only *oil side lights* and four hours of the run was after dark it will be seen that the time was pretty fair. Over the mountain was the worst of the going, of course, but I seldom had to resort to the low gear, and then only for the *very steepest* pitches. The car is a wonder, and my companion got an eye opener in dead earnest.

The car gave absolutely no trouble except one tire, which I replaced at Rutland, as the tube was pinched.

The way it slid up those mountain roads was a caution to the natives.

Yours truly,

H. E. SHILAND.

While we make no claims for the Autocar as a purely racing machine, its maximum speed of 35 miles an hour is, however, high enough so that the Autocar driver can feel he has a car to "eat upthe road" if necessary.

The points which we do emphasize in Autocar performances are these: Reliability under all conditions of roads and weather; ability to negotiate any traveled grade; extreme ease and simplicity of control, including brakes sufficiently powerful to stop the car in the minimum distance; simplicity and perfection of mechanism with consequent freedom from derangement; easy accessibility of all parts, and absence of vibration.

The Autocar has a speed range of from 3 to 35 miles an hour, and will travel 175 miles with one filling of the 10-gallon gasolene tank.

To give you a more practical idea of Autocar performance we will say that our dealers all over the country have cars for demonstrating to any intending automobile purchaser. Our booklet, which we will be glad to send you, gives full details of Autocar construction and name of our dealer nearest you.

THE AUTOCAR COMPANY, - Ardmore, Pa.

Member Association Licensed Automobile Manufacturers.

The Incomparable WHITE

With Limousine Body.



The ideal car for shopping and for evening use.

There is plenty of room. Seats six people.

Four seats inside. Price **$3200.**

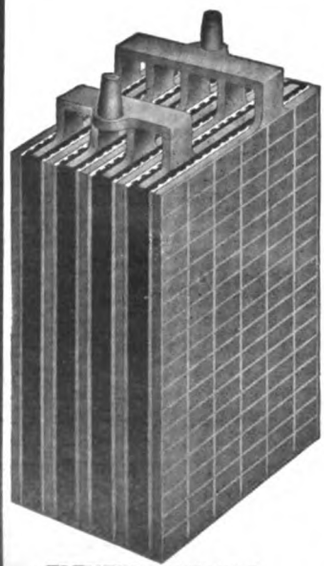
No Noise. No Vibration.

Send for particulars.

WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.

THE WILLARD

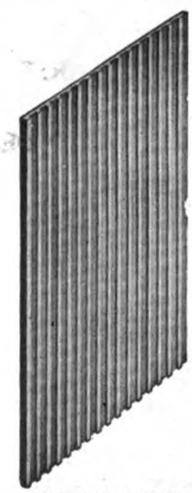
LATEST MODEL Light Weight STORAGE BATTERY



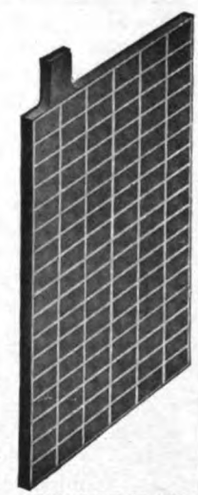
ELEMENT COMPLETE.



SHEATH OVER POSITIVE PLATE.



WOOD SEPERATOR.



NEGATIVE PLATE.

MANUFACTURED BY
THE WILLARD STORAGE BATTERY CO. CLEVELAND, OHIO.

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WHITLOCK COOLERS

For 1905.



The Leading Automobile Builders have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of coolers is worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT.

The Week's Patents.

777,710. **Steering Mechanism** for Motor Road Vehicles. Charles C. Wright, London, England. Filed January 15, 1904. Serial No. 189,163.

Claim.—1. Steering mechanism for motor road vehicles, consisting in combination of a worm, means for causing the rotation thereof, a worm wheel gearing with said worm, a lever integrally connected to said worm wheel, a fore carriage, links connected to each side of said fore carriage, a lever to whose extremities the said respective links are connected, and a link connection between said first and last named lever, substantially as described.

777,727. Driving Gear for Motor Vehicles. Hans T. Hansen, Milwaukee, Wis. Filed January 3, 1904. Serial No. 210,920.



Are your eyes bothering you? Do they ache and pain you? Do they look red and feel hot? Are you troubled with headache and neuralgia? Does it hurt you to read or sew, or use the eyes steadily?

Then don't waste another hour, but get EYE-FIX, the only sure and painless cure for all eye troubles. It never fails to give instant relief, and as it contains neither cocaine, atropine, belladonna or other dangerous elements, EYE-FIX is used universally by physicians and opticians.

EYE-FIX is good to keep the eyes well and strong. And it's the one safe remedy for every eye trouble in both young and old.

If baby's eyes are weak or sore—use EYE-FIX.

If grandfather's eyes are weak and weary—use EYE-FIX.

If your own eyes are bad from any cause—use EYE-FIX.

All druggists and opticians sell EYE-FIX at 50 cents. Ask for it and take no substitute. No other eye remedy in the world is like EYE-FIX, because no other remedy produces the same splendid results as EYE-FIX. A trial bottle for 10 cents will be sent you direct from our laboratory. Eye-Fix Remedy Co., Detroit, Mich. Dept. S.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—1903 Olds Runabout, good condition. D. N. SNYDER, Neoga, Ill.

1904 WHITE STEAMER for sale. In perfect condition; run very little. Canopy top, glass front, baskets, D. & G. lamps, extra tire, dust shield, odometer, gradometer, clock, steam whistle and horn. Cost without extras $2,275. $1,800 will buy. Reason for selling, I want a 1905 White. Address H. C. COLLIER, Binghamton, N. Y.

FOR SALE—Vises, gasoline engines, and patterns, pumps, tires, copper tanks, belting, pulleys, hangers, shafting, carburettors, lamps, Apple dynamos, storage batteries, steam car fittngs, bells, Edison mimeograph, power air compressor, chains, electric cars $100, $150; steam cars, $150 and up; Autocar, $250; Winton, $175; Winton delivery wagon, $400; Oldsmobile, with top, $200; one hundred cars, all kinds, very low, to clear out; 75 automobiles, $100 and up, all kinds. ATLAS AUTOMOBILE CO., Pittsburgh, Pa.

FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address, Room 403, First National Bank Building, Danville, Ill.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

WANTED—Fifteen to twenty traveling salesmen by a well-known and established tire manufacturing company, making standard goods. Only active men who know how to work effectively and all the time need apply. Exceptional opportunity for men of the right sort. Address, TIRES, P. O. Box 649, New York.

THE ACME IMPROVED 1905 MUFFLER.



Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

AUTOMOBILE.
STATIONARY.
MARINE.

ACME MOTOR CAR & REPAIR CO.,

Cleveland, Ohio.

Southern Agents: A. L. DYKE, 311 Pine St., St. Louis, Mo.
Eastern Agents: SMITH & EDWARDS, 116 Nassau St., New York City.
Western Agents: E. J. DAY & CO., 819 Mission St., San Francisco, Cal.

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Claim.—1. The combination with a driving shaft and a driving wheel mounted so as to oscillate with respect to the axis of the driving shaft, of a universal joint connection between the shaft and the wheel comprising outwardly extending forks secured to the driving shaft, and having notches in their ends, a part of the hub having inwardly extending forks provided with end notches and a block having two pairs of gudgeons in transverse planes, said pairs of gudgeons being arranged in the end notches of the shaft and hub respectively.

777,740. Variable Speed Gear. Charles Monin, Boulogne-sur-Seine, France. Filed July 9, 1904. Serial No. 215,922.

Claim.—1. A variable speed gear allowing of passing from the speed 4 to the speed 1 and vice versa, comprising a rotary shaft b extending through the apparatus, two cams or eccentrics fixed to the shaft b at angles of one hundred and eighty degrees with regard to each other, a tubular rotary shaft a surrounding the shaft b and revolving independently from safe, a plate d fixed to the shaft a and provided with two diametrical recesses crossing each other at right angles, an intermediate plate l independent from the shafts a and b, placed between the cams and the plate d, and provided with two diametrical recesses crossing each other at right angles, means for guiding the plate l in such a manner that it shall be caused to revolve eccentrically about said shafts a and b, and two cams or eccentrics fixed on the plate l at one hundred and eighty degrees with regard to each other and engaging the recesses of the plate d, substantially as and for the purpose set forth.

777,853. Device for Effecting the Radiation of Heat. Ralph B. Hanscom and George A. Prior, Hartford, Conn. Filed January 15, 1903. Serial No. 139,237.

Claim.—1. As an article of manufacture a heat radiating attachment comprising a series of similarly curved loops of continuous wire to a corresponding section in each of which is brazed a grooved metal connecting piece, whereby said series of loops may be attached to a metal chamber.

777,964. Automobile. Vincent Link, Geneva, Ohio, assignor to the Geneva Automobile and Mfg. Co., Geneva, Ohio, a Corporation of Ohio. Filed July 16, 1904. Serial No. 216,770.

Claim.—1. In an automobile, the combination of the housing for the compensating mechanism; which housing has laterally projecting tubular members adapted for connection, through springs, with the vehicle body, and has also an open front end, with an engine, and a housing which is rigidly connected with the engine cylinder and incloses the working parts of the engine, and is open at its rear end and is removably connected with the open front end of the differential housing to form one large inclosed chamber, and a supporting link which is pivoted at its upper end to the vehicle body, and at its lower end to the front end of the engine, both of the pivots of said supporting link being horizontal, and one being extended transversely of the body and the other being at right angles to said pivot.

777,979. Pneumatic Tires. Jules F. de Savignac, Marseilles, France. Filed, April 6, 1904. Serial No. 201,894.

Claim.—1. The combination, with a wheel and its tire, of a plurality of tire protecting tread sections, retaining hoops disposed at either side of the tire, and each consisting of a plurality of contiguous hoop segments, bolts for adjustably connecting said hoop-segments, and means for connecting said tread sections and said retaining hoops.

777,983. Automobile Lamp Cover. Harry S. Tompkins, Newark, N. J. Filed January 27, 1904. Serial No. 190,790.

Claim.—1. An automobile side light cover, comprising front and back portions, each having a laterally widened or flaring upper end, and side pieces alternating with said front and back portions and having narrowed or tapering upper ends, all said portions being joined at their adjacent margins.

778,025. Solder for Aluminium or Aluminium Alloys. Ricardo Fortun and Eduardo Semprun, Madrid, Spain. Filed July 2, 1904. Serial No. 215,100.

Claim.—1. The herein described solder for aluminium or aluminium alloys, including the following ingredients, silver, aluminium, zinc and tin, at least a portion of the silver, aluminum and tin being phosphorized and at least a portion of the zinc being sulphurated.

778,133. Motor Vehicle. Warren H. Keates, Atlantic City, N. J. Filed May 27, 1904. Serial No. 210,117.

Claim.—1. In a motor vehicle, the combination of an electric generator, a spring motor geared thereto, a counter shaft geared to said spring motor and also to the driving axle of the vehicle, and means for throwing said counter shaft into or out of gear with said driving axle, substantially as set forth.

778,136. Pneumatic Tire. Philip Magnus, Northcote, Victoria, Australia. Filed October 5, 1904. Serial No. 227,227.

Claim.—1. In pneumatic tires a series of segments formed of "flesh" leather, said segments having been immersed in a solution approximately of seventy (70) per cent of naphtha and thirty (30) per cent india rubber, then passed between rollers having prickers and a solution of approximately sixty (60) per cent naphtha and forty (40) per cent india rubber on the rollers, then immersed in a solution approximately of sixty (60) per cent naphtha and forty (40) per cent air, and means for securing said bricks in position, substantially as described.

778,159. Automobile Sled. Frank Walter, Cleveland, Ohio. Filed June 8, 1904. Serial No. 211,663.

Claim.—1. An automobile comprising a body portion, a motor supported thereby, a running gear comprising a forward steering axle and a rear axle, runners mounted on the ends of said axles, a shaft journalled in said rear runners, means for rotating said shaft from the motor, and spurred wheels fixed to said shaft, substantially as described.

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In the recent issues of two or three of the prominent trade journals the price of the ORIENT Model F Light Touring Car, with Tonneau, was wrongfully given as $1500. It should have been $1650.

This error would not have caused much trouble if it had not been for the fact that dealers all over the country had gotten wind of what is going to happen and wrote us at once, as soon as the price was printed.

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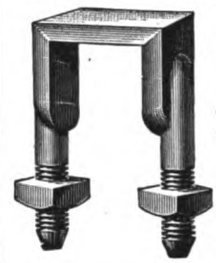
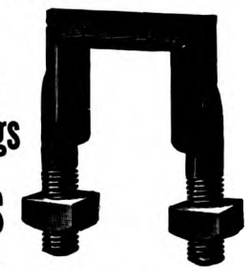
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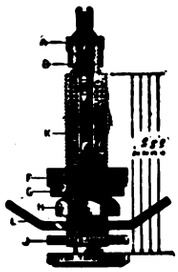
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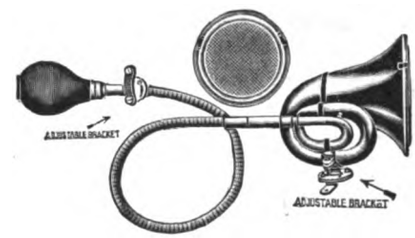
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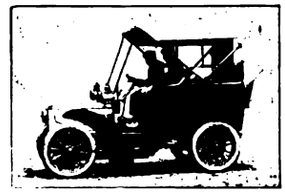


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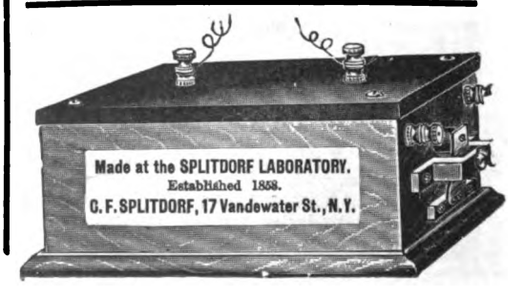
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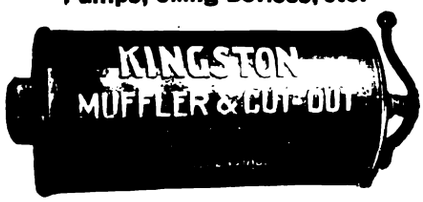
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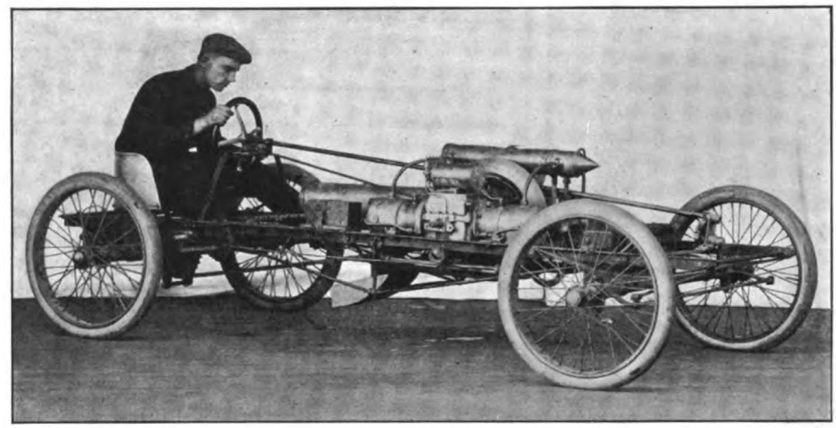
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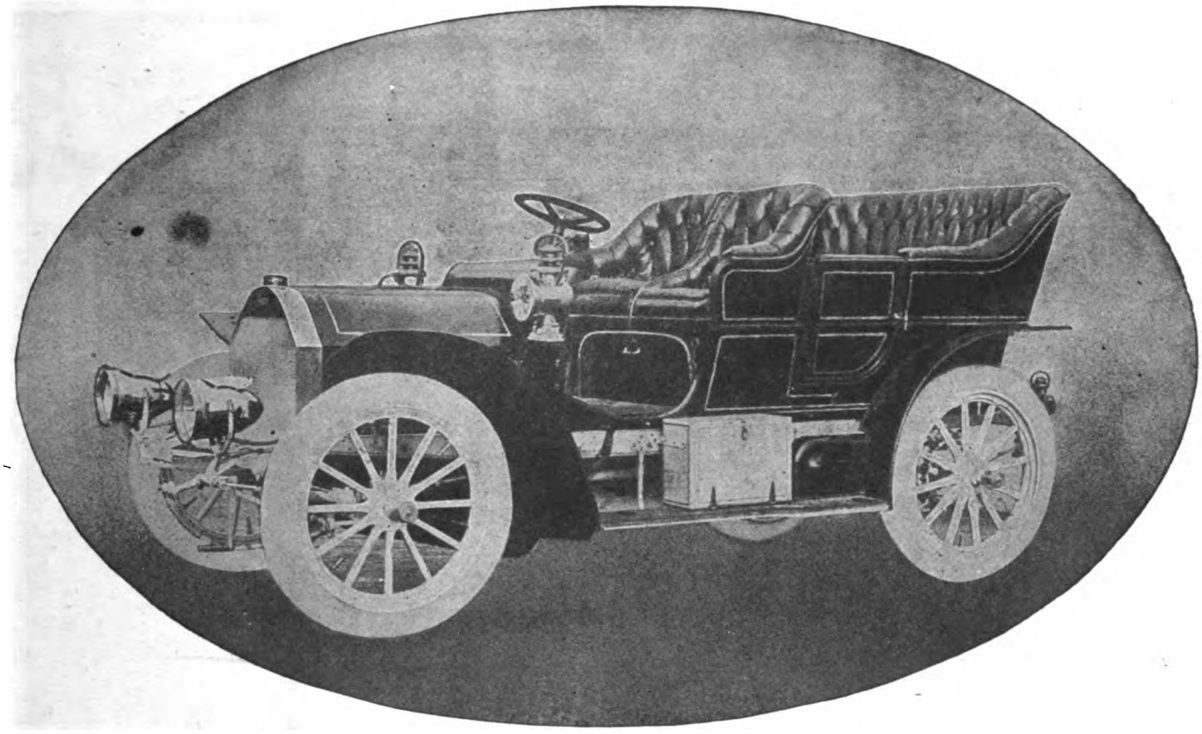


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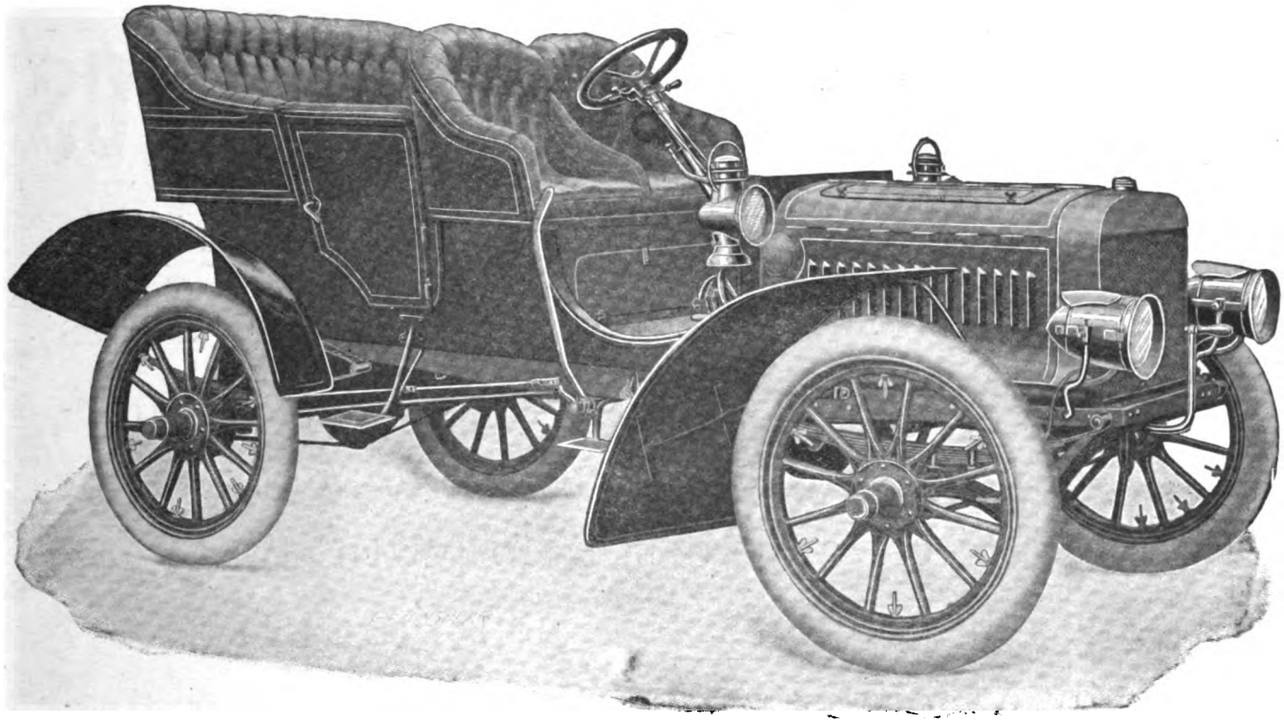
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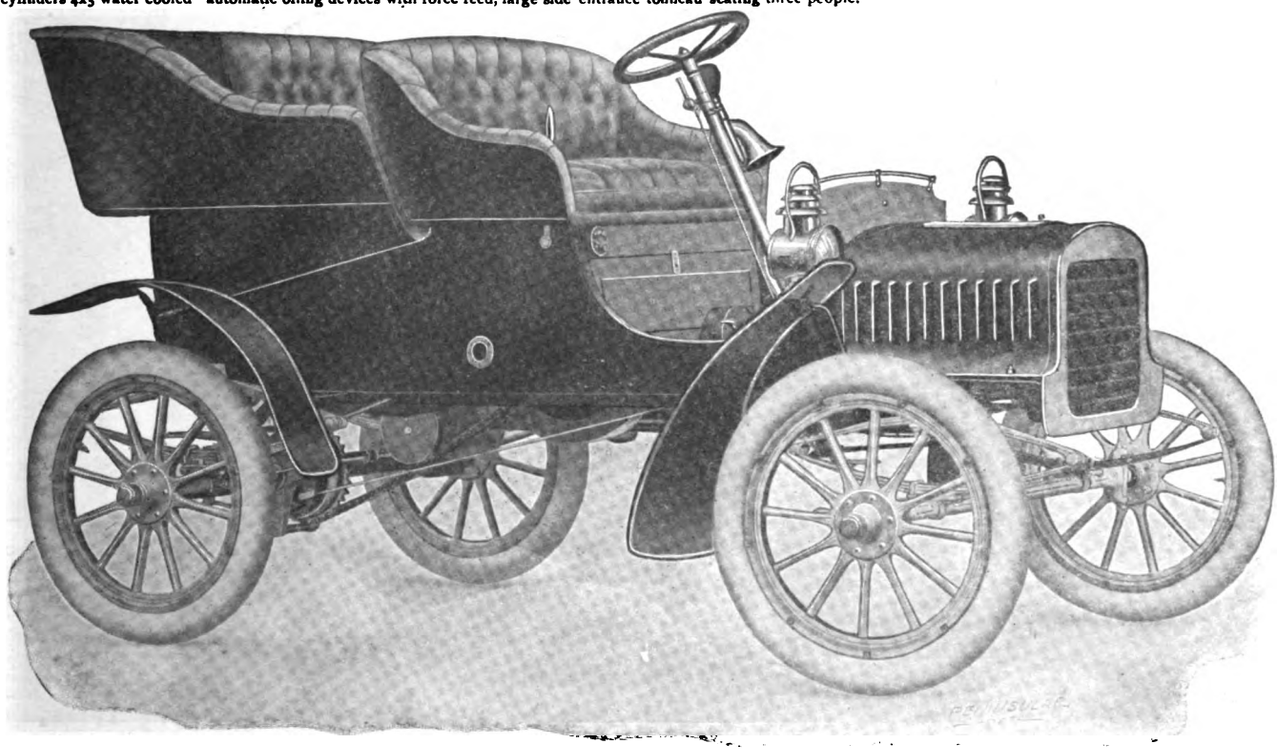
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Suit Against Michelin Tires

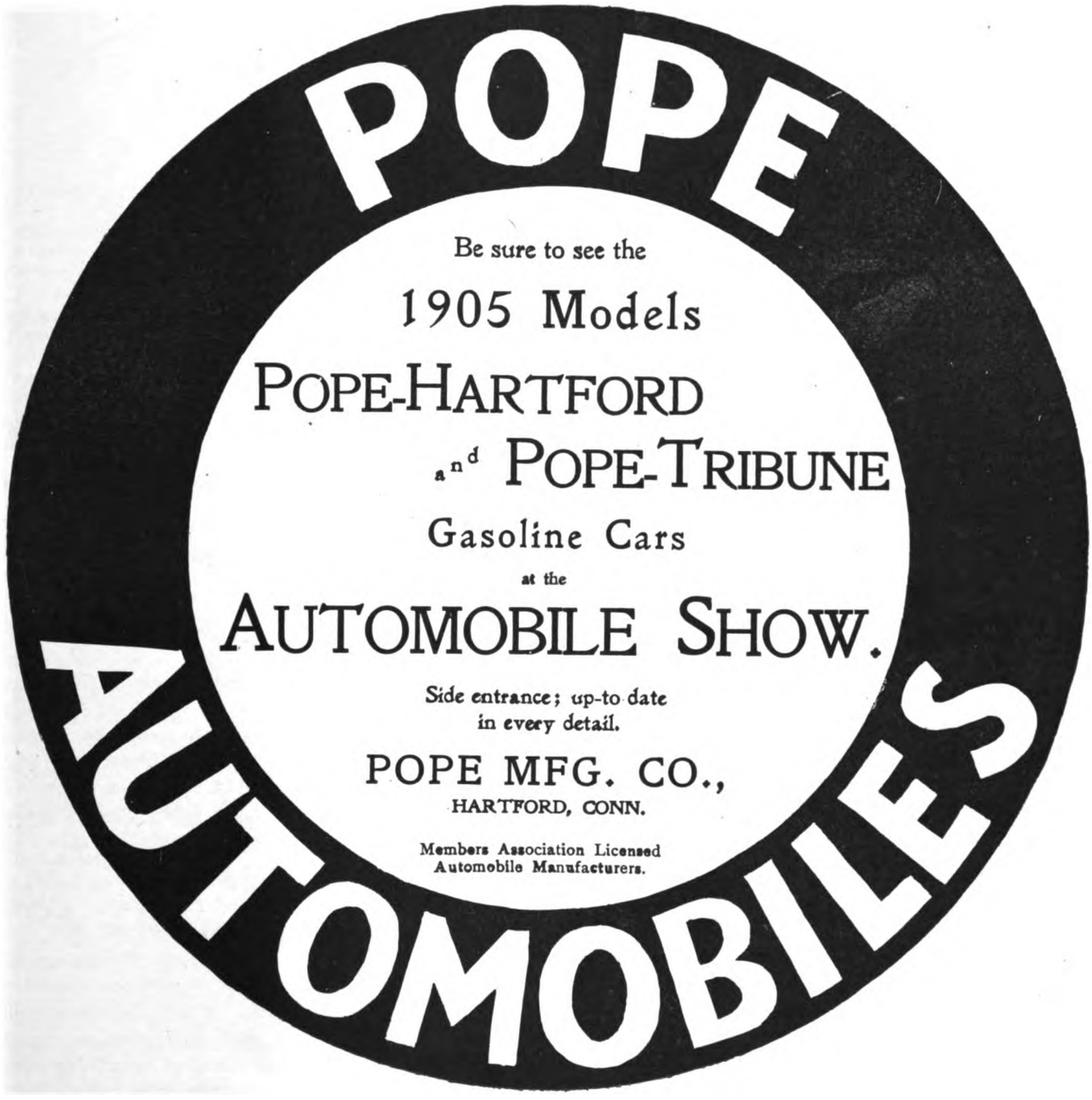
We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO.. Indianapolis, Ind.

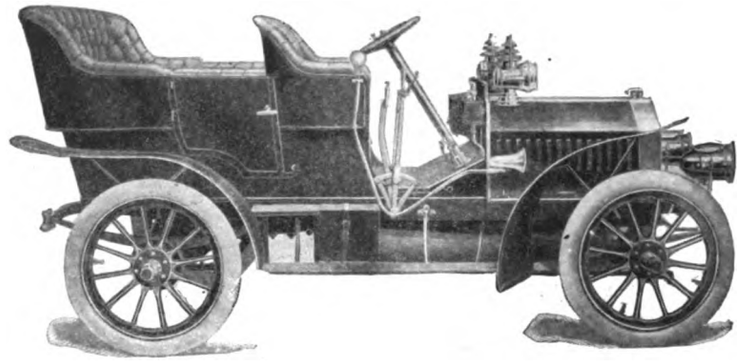
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THE "CLEVELAND"

A high-grade, light-weight touring car.



18 h. p. four cylinder vertical engine. Price, $2,800.

FEATURES:—91 inch wheel base; pressed steel frame; aluminum underbonnet; spark and throttle control on top of steering wheel; three-speed transmission with direct drive on high speed; mechanically actuated inlet and exhaust valves; jump-spark ignition; side door entrance.

We are establishing Agencies Write for particulars.

CLEVELAND MOTOR CAR CO., • • CLEVELAND, O.

HORSE POWER

Some of our competitors try to make CADILLAC dealers believe that we lack sufficient horse power, and that we only "claim six and one-half horse power." It is true we rated our 1903 engine at but six and one-half horse power and our 1904 engine at eight and one-quarter horse power. We had an object in doing this. We knew we had sufficient horse power to drive a CADILLAC over any road and up any hill that any automobile would go. No CADILLAC engine was sent out of our engine factory that would not test above eight and one-half horse power actual brake test after one hour's run on the block.

FOR 1905

we have continued to use the same engine in all models under $1000 00 in price. We are confident that we have increased the horse power delivered to the ground. We gear the heavier models for moderate speed and great power, the light ones for both power and speed. The superior construction of all models enable us to assure all prospective customers of greater road ability than we gave last year. The CADILLAC has all the power necessary to drive it anywhere at reasonable speed. We've never claimed any more than we had. A CADILLAC engine has on several occasions demonstrated its ability to do more work than some so called 12 to 16 horse power gasolene engines can do when mounted in a carriage.

CADILLAC AUTOMOBILE COMPANY,

DETROIT, MICH.

Members of Association of Licensed Automobile Manufacturers.

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1905 ANNOUNCEMENT

The Autocar

A NEW TYPE.

We believe that the Autocar in all its types represents the highest excellence in automobile design, workmanship and material. Every Autocar is built on honor. We feel, therefore, that our new type will meet with a cordial reception.

This car, **Type XI.**, larger and more powerful than the other types, has a four-cylinder vertical engine of 16-20 horsepower. The body is built on the newest and most approved French lines. The front seat is divided and both front and rear seats are large and comfortable.

While this car is built upon the tried Autocar principles which have been so splendidly proven, it shows a number of very important improvements making for increased simplicity, ease of operation, safety and comfort.

In fact, though Autocars have always been noted for absence of bewildering intricacy of mechanism, yet no one can but be impressed with the extreme simplicity of this new car. It is a triumph in scientific construction and arrangement.

This car has more than met our highest expectations in the road test. In fact, its performance has been a surprise to experienced automobile men. The power of the car carries it, fully equipped and loaded with five passengers up, tested 12 per cent. grades, for instance, at 20 to 25 miles per hour on the direct drive, while on the level the car attains a speed of 40 to 45 miles. The car is a superior climber on any hill.

Altogether our eight years' experience has enabled us to produce in this type, a four cylinder car we are assured cannot be surpassed by any similar car at any price.

The price of Type XI. is $2000. Ready for delivery January 16.

Type VIII.—Four-Passenger at ($1400,) and Type X.—Runabout at ($900,)

have made *Autocar Reputation*. Each stands at the head of its class for value and efficiency.

Autocars, Types VIII., X. and XI. will be on exhibition at the New York Automobile Show, Madison Square Garden.

Catalogue descriptive of the 1904-05 types will be sent free upon request. This catalogue contains also addresses of our dealers throughout the country who will be glad to give demonstrations to prospective automobile purchasers and explain in detail the merits of our cars.

THE AUTOCAR COMPANY,

Ardmore, Pa.

Member Association of Licensed Automobile Manufacturers.

The Old Reliable

WATERLESS KNOX CARS

FOR 1905.

HIGHER IN QUALITY. LOWER IN PRICE.



Superb in Style and Finish.

The Knox 1905 two-cylinder (air-cooled) machine is as quiet and as smooth working as any four-cylinder machine, with only half its complications.

14-16 H. P. Side-door Tonneau, -	**$1900**
14-16 H. P. Convertible Surrey, -	**1750**
14-16 H. P. Folding Front-seat Runabout,	**1500**
Single Cylinder Folding Front-seat Runabout,	**1250**

1905 Models will be on exhibition at the New York and Chicago Automobile Shows.

Knox Automobile Co.

SPRINGFIELD, MASS.

Member Association of Licensed Automobile Manufacturers.

Selling Agents in all Principal Cities.

Waterless Knox Automobiles awarded GRAND PRIZE at Louisiana Purchase Exposition.

Will exhibit at the Automobile Show, Madison Square Garden, New York, Jan. 14th to 21st, 1905.

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THE HEIGHT OF THE SEASON

— FOR THE —

PREMIER AIR-COOLED

— IS —

JANUARY and JULY.



Did you ever stop to think when you saw your neighbor in New York drive away in his Premier, the thermometer at 0°, that the other fellow's neighbor in Los Angeles was enjoying the same privilege with the thermometer at 80°.

It's a business proposition for agents.
It's a satisfactory proposition for drivers.

Get the "CAR OF QUALITY," and have a satisfactory business proposition for next year. (The air cooled has no season.)

PREMIER MOTOR MFG. CO., - - - Indianapolis, Ind.

FIFTH ANNUAL

Automobile Show

Under the auspices of the Automobile Club of America, National Association of Automobile Manufacturers, and Madison Square Garden Company at

MADISON SQUARE GARDEN

NEW YORK

JANUARY 14th TO 21st, 1905

JAMES C. YOUNG, Manager

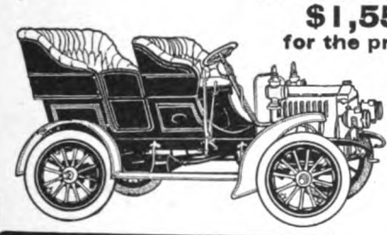
SPECIAL NOTICE The trade admitted free up to 1 o'clock each day upon presentation of business card and registering name and address at the BUREAU OF INFORMATION.

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"The Maxwell"

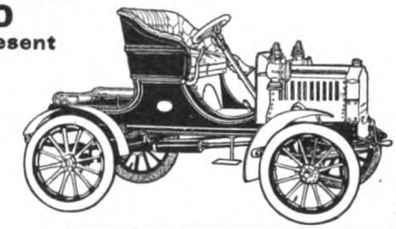
When you have ridden once in a Maxwell Automobile you may perhaps realize its smooth running qualities, its ease of manipulation, and its extreme simplicity of construction; but it is on long acquaintance only that you can fully appreciate those details of construction—those "Maxwell points," as we call them—that have made it a car to be relied on year in and year out, in any weather, on any road—a car that stays out of the repair shop, and in which "there is nothing to do but ride."

16 H. P. Touring Car
$1,550
for the present



The "Maxwell" cars have no pump (thermo-siphon). Their double opposed motor shaft drive is in front under the hood and easily accessible in every part. Bevel Gear Drive. Metal Bodies. Transmission Case and Crank Shaft cast in one piece of Aluminum. "Simply perfect and perfectly simple."

8 H. P. Tourabout
$700
for the present



MAXWELL-BRISCOE MOTOR CO.
TARRYTOWN, N. Y.

"PUT DOWN 4 AND SUBTRACT 2,"

And any teacher who knows his book and is free from prejudice cannot but tell you that the rnotor that successfully performs the subtraction and accomplishes with two strokes all that others require four to accomplish is a distinct advance in the art.

The 2-Cycle Motor used in the Elmore Car

is an advance of the sort. There is no lost motion—no useless strokes.

Our booklets will help you to "study up" on the subject.
They are free for the asking.

ELMORE MANUFACTURING CO., Clyde, Ohio.

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A MATTER OF VALUE.

THE ROYAL TOURIST

32-38 H. P.

$3000.00.

Its equal has never been produced before.

NEW YORK SHOW, Section "M." **CHICAGO SHOW, Stands 33-34-35.**

Write Dept. I. for Catalogue.

ROYAL MOTOR CAR COMPANY, Cleveland, Ohio.

NEW ENGLAND AUTOMOBILE CO.,
182 Columbus Ave., Boston, Mass.

C. A. DUERR & CO., Inc.,
Broadway & 58th St., New York.

HARRY BRANSTETTER CO.,
Chicago.



Oct. 20, 1904.

Veeder Mfg. Co.,
Hartford, Conn.

Gentlemen:—

We take pleasure in stating that we have equipped our entire product of STEVENS-DURYEAS the past year with your Odometers, and have not had a single complaint.

We have found your Odometers entirely satisfactory, and accurate. We shall continue to equip our runabout for the season of 1905 with same.

Very truly yours,

J. STEVENS ARMS & TOOL CO.,
AUTOMOBILE DEPARTMENT.
C. C. Hildebrand, Sales Mgr.

A bare car on which the purchaser must spend further time and money to supply deficiencies of equipment, is not as attractive as a complete, well-equipped car.

Veeder Odometers are properly a part of the regular equipment. Men want them on their machines. Our sales and re-orders show that.

Instead of trying to skin through with as little as possible in the way of equipment, assume an inexpensive liberality and supply Veeder Odometers. An odometer has a very great interest for the man who runs his own car, and when it is supplied, it conveys an impression of considerate forethought on the part of the manufacturer.

The cost of supplying Veeder Odometers is proportionate to the number of cars you sell, and is not a heavy fixed charge.

The Veeder Manufacturing Co.

26 Sargeant Street, Hartford, Conn.

Makers of Cyclometers, Odometers, Tachometers, Counters and Fine Castings.

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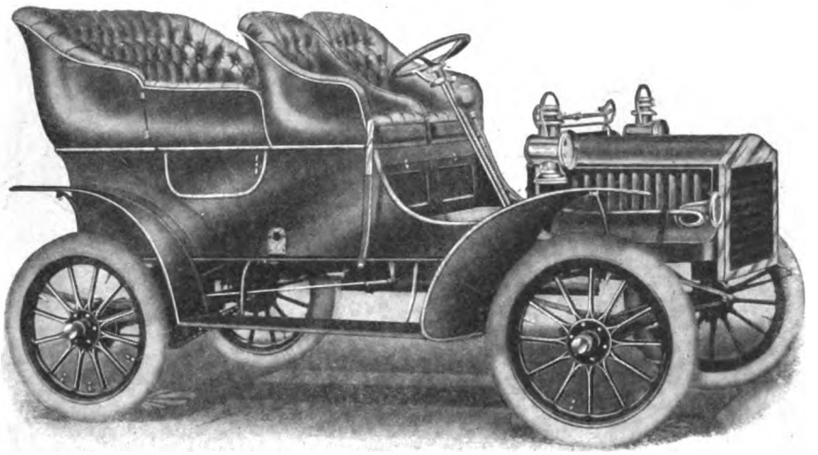
The MICHIGAN

Two Models—"E" and "D."

Light Touring Cars

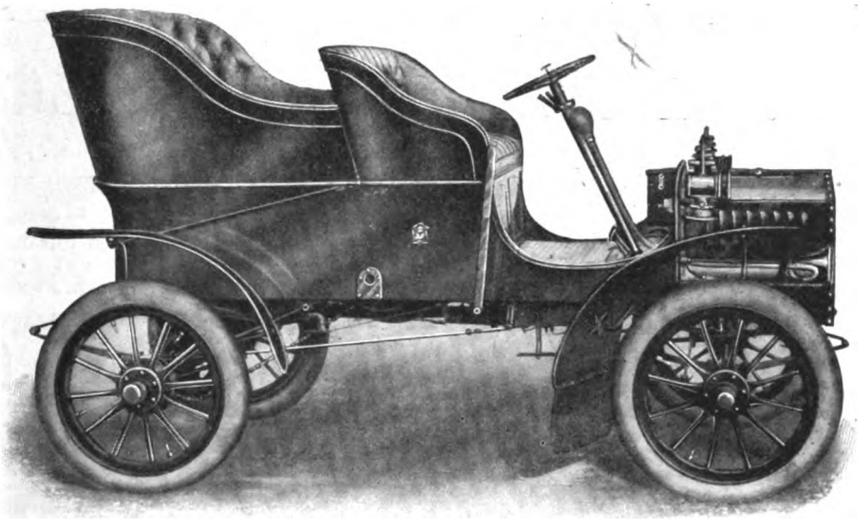
For 1905.

Appropriately Named "The Car of Power."



Model E, 1905 Michigan—Price, $1,250. Wheel Base, 86 Inches.

This superb new creation for the coming season must be seen to be appreciated. t first appeals to the purchaser by its beauty, then it satisfies him by its SPEED, STRENGTH and DURABILITY.



Model D, 1905 Michigan—Price, $1,100. Wheel Base, 80 Inches.

These magnificent cars are equipped with our tried and tested 1904 Motors, 4⅝x5 in., 14 brake test Horsepower, two cylinder, horizontal opposed, Planetary transmission, with two speeds forward and reverse; 1¼ inch chain, Warner differential, Hill Precision oiler, Kingston or Schebler carburetor, expanding rear hub brakes and brake on differential, full elliptic springs of best quality. French hood. Wheels, 30 inch. Diamond or other standard tire, 3½ inch. Construction throughout, first class.

☞ This car is unsurpassed in speed, power, appearance, easy riding, flexibility and general utility by anything at same price. We invite correspondence.

Both Models on exhibit at the New York Automobile Show, Jan. 14-21. Section C, Basement. Call and examine them in detail.

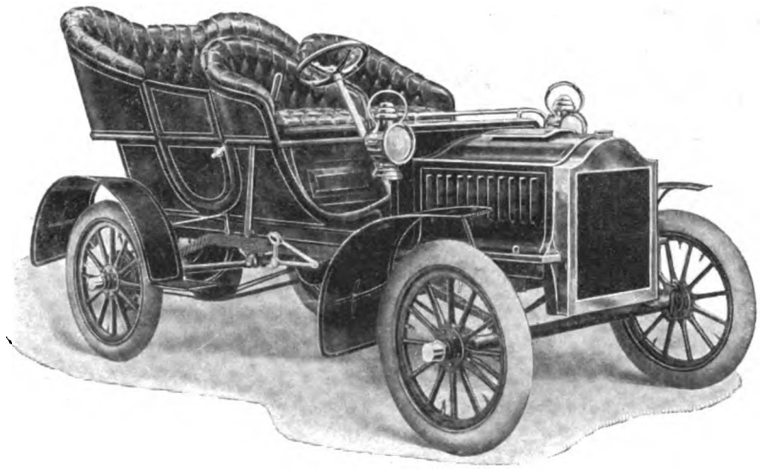
MICHIGAN AUTOMOBILE CO., Makers, Kalamazoo, Mich.

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OLDSMOBILE

AT THE NEW

A WONDERFUL



A 20 H.P.

TOURING CAR,

PRICE $1400,

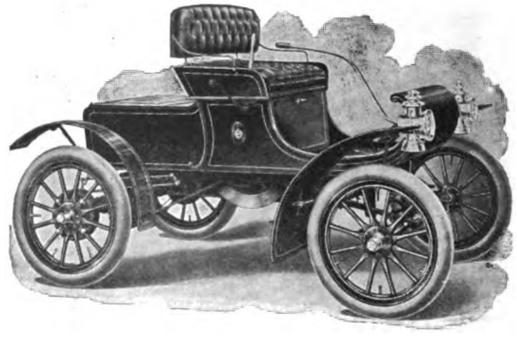
is the new member of the OLDSMOBILE family.

20 H.P. 2-Cylinder Motor. Side Entrance.

This car has been built in response to a distinct demand and has been eagerly expected by dealers and the public alike. It combines comfort with speed, hill climbing ability, and plenty of surplus power. The motor is double opposed, 5¼x6 in.; wheel base, 90 inches. Construction is simple and durable. High grade material used throughout. Noise of exhaust completely eliminated.

THE STANDARD RUNABOUT.
Price $650.

Still continues to be the most popular car ever produced. Each year has found it better and stronger and more reliable than ever. This year a new carburetor gives increased power with a less consumption of fuel. It climbed Eagle Rock in record time. M. Fournier just completed a tour of all Europe with this car, winning a wager of $10,000.



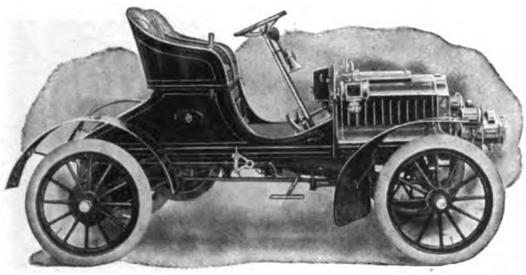
Call on us at Madison Square Garden, or write.

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EXHIBIT

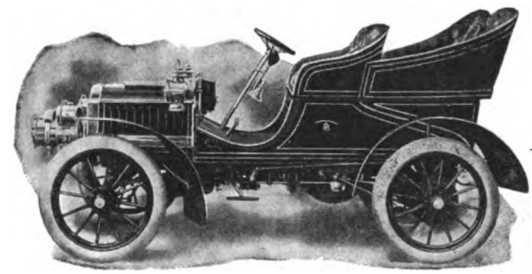
YORK SHOW.

LINE OF CARS.



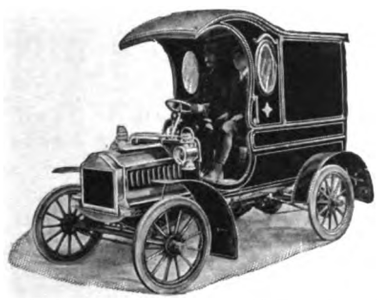
TOURING RUNABOUT.
Price $750.

This car is especially adapted for the doctor's and business man's use. It combines style, speed and convenience. Its simple construction and durability eliminate petty annoyances.



LIGHT TONNEAU CAR.
Price $950.

Increased power—style and comfort all combine to make this the most popular car of its class. Is equipped with Oldsmobile 10 H. P. motor. Has tilting steering post, honeycomb radiator and parts easily accessible.



LIGHT DELIVERY CAR.
Price $1000.

Equipped with 10 H. P. motor and all the improved fixtures. There are a large number of these cars in active service, and users testify to their convenience and economy. We will gladly furnish you with evidence showing the relative expense as compared with the old method of delivery.



HEAVY DELIVERY CAR.
Price $2000.

16 H. P. 2 cylinder motor—every part built to secure strength and endurance. This car meets commercial requirements to a remarkable degree. It has a very large carrying capacity. Ready for January delivery. Full details sent on application.

ADDRESS

OLDS MOTOR WORKS,

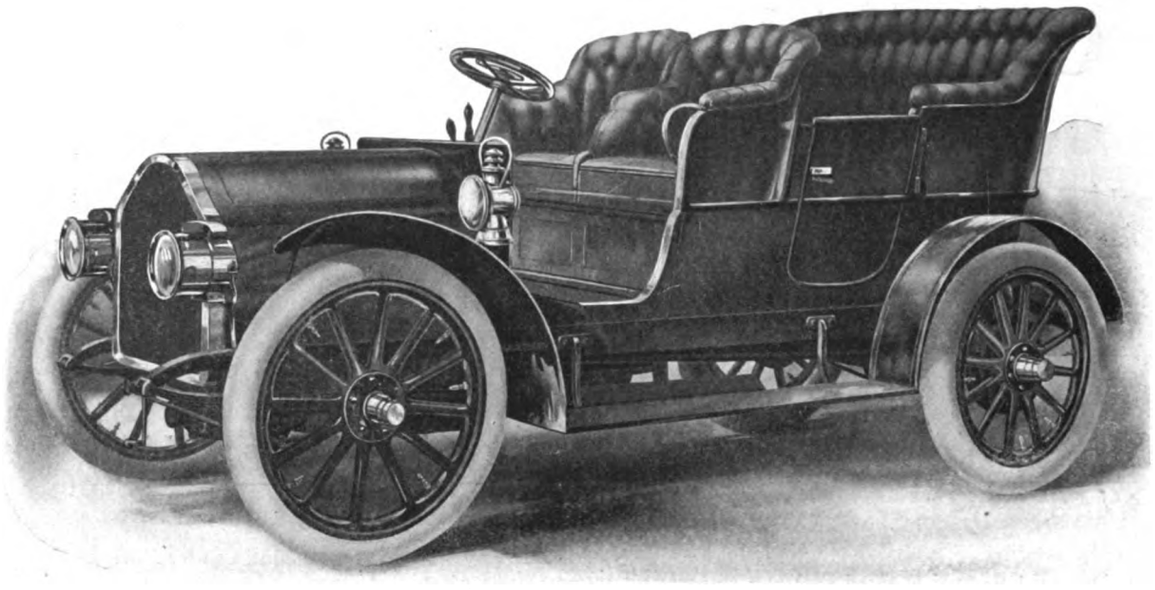
1332 Jefferson Ave., DETROIT, U. S. A.

Member of the Association of Licensed Automobile Manufacturers.

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ORIENT TOURING CAR,

Model de Luxe, 18-20 Horsepower. Price, $2,250.



As we stated three or four weeks ago, our reason for withholding the illustrations of our new Orient Touring Cars was an excellent one.

We didn't want them copied this season.

The illustration shown above ought to tell you what good reason we had to fear that the lines would be copied.

There is all the sweep, and power, and massiveness of the 60 Horsepower cars, with the lightness and beauty of line and coloring that distinguish the highest priced foreign models.

Yet the price is only $2250.

The car has a 4-cylinder, vertical tandem engine, of 18-20 Horsepower, the cylinders being cooled by direct air-blast from a powerful, four-bladed fan. The air-blast circulates so perfectly, all around the cylinders, that the rear cylinder is actually cooler than the front.

Speed, over ordinary roads, 35 miles an hour. Not a racing car, but the car for five-tenths of your possible Touring Car customers, because it is simple, reliable, a quiet runner, fast enough; and in a class by itself for beauty.

Three other Touring Cars in the Orient line—the Touring Runabout; the Light Touring Car with Tonneau, at $1650, and the Touring Car, Model G, at $2000. All these cars are of exactly the same design—4-cylinder, vertical tandem engines, as in the Model de Luxe, illustrated above. In addition to these, the Buckboards, at $375 this year.

Write us.

WALTHAM MANUFACTURING CO.,

Members of Association of Licensed Automobile Manufacturers.

Sales Office for New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida and Georgia.

44 Broad St., New York City.

Factory and General Sales Offices:

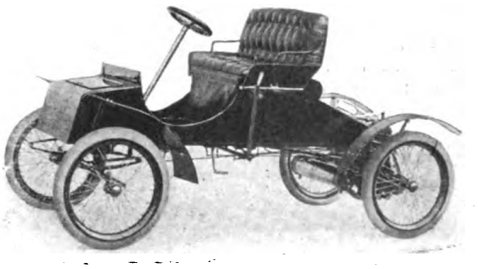
WALTHAM, MASS.

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Orient Buckboards, 1905 Model, $375.



Surrey, Price $450.



Runabout, Price $475.

The dealers throughout the country who have handled the Orient Buckboards have enjoyed a great advantage over their competitors in two ways.

1. They have been able to sell a great many buyers who could not afford to pay more than the price of the Buckboards.

2. They have sold a great many larger cars to people who first acquired a love for motoring from running about in a Buckboard.

The 1905 Buckboards are better than ever, and still lower in price. There is the Buckboard, $375; the Surrey, $450; the Runabout, $475; and the Tonneau, $525.

These are winners—you ought to have them.

Sales Office for New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida and Georgia.

44 Broad St., New York City.

WALTHAM MANUFACTURING CO.,

Members of the Association of Licensed Automobile Manufacturers.

Factory and General Sales Offices: WALTHAM, MASS.

See separate Advertisement on the latest Orient Air-Cooled Touring Cars.

THE BAKER ELECTRIC

AT THE NEW YORK SHOW

WE WILL EXHIBIT OUR LATEST PRODUCT,

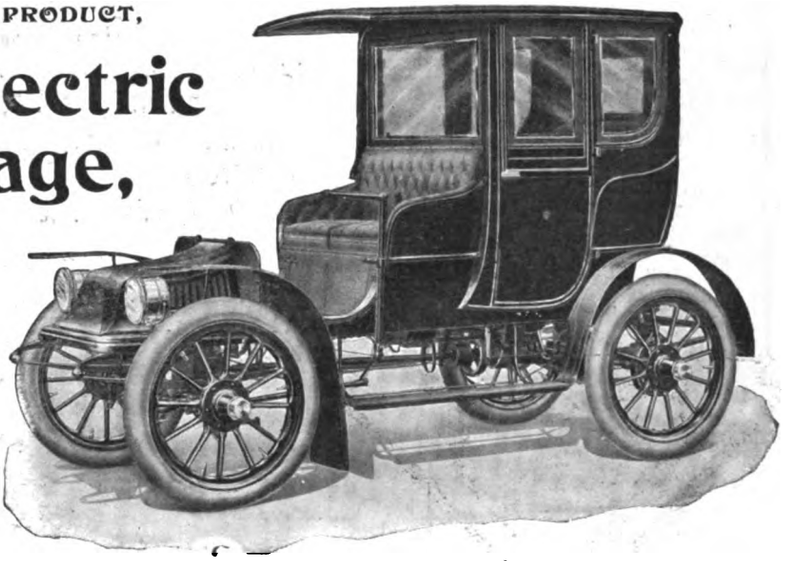
The Baker Electric Depot Carriage,

The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES,

SURREYS, ETC., ETC.



WE ARE READY TO TALK BUSINESS.

THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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BULLETIN OF

G & J RECORDS

WORLD'S CHAMPIONSHIP and WORLD'S 10-MILE TRACK RECORD.

Peerless Green Dragon, by Barney Oldfield: 9:12 3-5.

WORLD'S TRACK RECORDS, Peerless Green Dragon, by Barney Oldfield:

1 mile,	0:51 1-5	"
5 miles,	4:29	"
10 miles,	9:12 3-5	"
15 miles,	14:03 3-5	"
20 miles,	18:45 2-5	"
25 miles,	23:38 3-5	"
50 miles,	48:39 1-5	"

WORLD'S TRACK RECORDS FIVE MILES, For LIGHT WEIGHT and MIDDLE WEIGHT CARS.

Ford Racer, by Frank Kulick:

1st	mile, 59	sec.
2nd	" 57 2-5	"
3rd	" 56 4-5	"
4th	" 55 1-5	"
5th	" 56 1-5	"
Total,	4:43 3-5	

WORLD'S 1-MILE TRACK RECORD for LIGHT and MIDDLE WEIGHT CARS.

20 H. P. Ford, by Frank Kulick, 55 sec.

WORLD'S TRACK RECORDS SIX TO TWENTY-FIVE MILES FOR STRIPPED TOURING CARS.

Peerless Blue Streak, by Charles Burman:

6	miles,	6:24
10	"	10:40
15	"	16:02 2-5
20	"	21:24
25	"	26:50 1-5

WORLD'S 5-MILE TRACK RECORD FOR STRIPPED TOURING CARS.

Pope-Toledo, by B .F. Dingley: 5:09 3-5

WORLD'S 1-MILE TRACK RECORD FOR STRIPPED TOURING CARS.

Pope-Toledo, by George Fuller: 1:00 3-5

WORLD'S TRACK RECORDS ONE AND FIVE MILES, FOR STOCK CARS IN FULL TOURING CONDITION.

Pope-Toledo. by B. F. Dingley:

1	mile,	1:11 3-5
2	miles,	6:02 1-5

Every World's Track Record

IS NOW HELD BY

G & J THREAD FABRIC TIRES.

When the G & J Tires excel so unquestionably in racing work, which is known by everyone to be the hardest of all tests on tires, there can be no question in anyone's mind as to their great durability in ordinary road work.

TAKE A TIP

from the following famous drivers and

USE G & J's.

BARNEY OLDFIELD,	FRANK KULICK,
WEBB JAY,	FRANK CROKER,
FRANK GARBUTT,	B. F. DINGLEY,
CHARLEY BURMAN,	GEORGE FULLER.

Dec. 18, at Los Angeles:

B. F. Dingley, in Pope-Toledo, broke one and five mile records for stock cars in full touring condition.

1 mile, 1:11 3-5. 5 miles, 6 0:2 1-5.

Dec. 21, at Los Angeles:

Barney Oldfield, in Peerless Green Dragon, lowered all track records from two to nine miles.

2 miles, 1:46; 5 miles, 4:29; 9 miles, 8:04.

This performance gives Oldfield and G & J Tires every world's track record from one to fifty miles.

G & J

G & J TIRE CO.

Factory, 549-617 East Georgia Street, INDIANAPOLIS, IND.

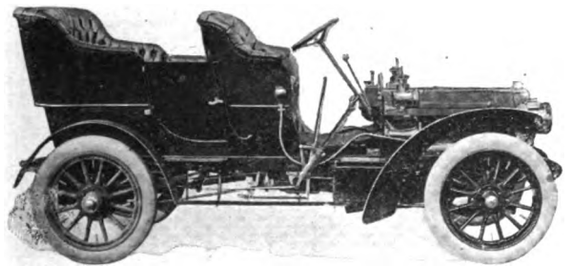
Branch: 429 Wabash Avenue, CHICAGO, ILL.

Branch: 247 Jefferson Avenue, DETROIT, MICH.

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Peerless

The Car of Achievement



We Base Our Claim

for the superiority of Peerless cars upon the consistent record of victories achieved during the year 1904 in every class of competition—hill-climbing contests, races open to stock cars, match races open to the world's fastest machines and special exhibitions against time.

All Peerless Owners Have Shared

in the pleasure of driving a fast car. In the little rivalries of the road, the Peerless always gives a good account of itself. The simplicity of our cars, combined with intelligent design in every detail, insures that they are always ready for service.

Do You Want Further Information of America's Best Machine?

If so, write to us to-day for descriptive matter.

THE PEERLESS MOTOR CAR CO.

CLEVELAND, OHIO.

Members Association Licensed Automobile Manufacturers

WHY DOES

The 1905 Logan



20 H. P. 1620 Lbs.

Ride easier, wear longer, look better, have less tire trouble and in fact give better satisfaction?

BECAUSE OUR

SPRING TRUSSED FRAME

equalizes the load and does away with all the jolt and jar on both passengers and machinery.

LET US TELL YOU ABOUT

"THAT CAR OF QUALITY"

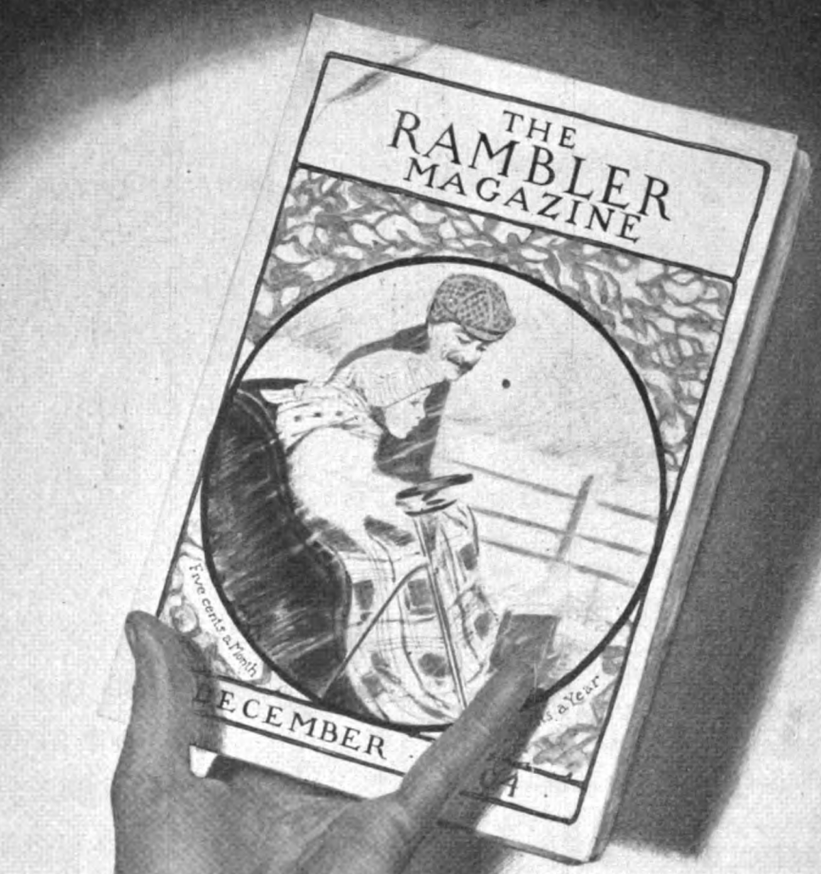
See us at the New York Show January 14-21, Section B, Exhibition Hall.

The Logan Construction Co.,

CHILLICOTHE, OHIO.

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Rambler



The current issue of THE RAMBLER MAGAZINE contains a thorough description of our 1905 models, and other items of general interest. A copy will be sent, free, on request.

THOMAS B. JEFFERY & COMPANY,

Main Office and Factory, KENOSHA, WISCONSIN.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, January 5, 1905. No. 15

CONDITIONS IN THE SOUTH

Returned Tradesman Interestingly Surveys the Situation—Cotton Surplus Affects Prospects.

The situation in the South and the promise held out by that section of the country are among the things about which there is no settled opinion. Generally speaking, the condition of the roads is not such as tends to encourage the use of automobiles, and while few have expected great results, some of those who have covered the territory have returned with very pessimistic opinions indeed.

J. D. Anderson, vice-president of the Hartford Rubber Works Co., is one of the tradesmen who recently visited the South, and as he had no cars to sell and was merely intent on personally meeting good customers and on "sizing up" conditions and prospects, his impressions are of more than usual weight. Mr. Anderson spent nearly three weeks of December in company with his concern's Southern representative, Arthur W. Kirk. Among other places they visited Atlanta, Savannah and Augusta, Ga., and Jacksonville, Tampa, Miami and Daytona, Fla.

In Atlanta Mr. Anderson did not find conditions particularly flattering. The highest numbered car there is 82; there are probably forty machines in actual use, only one of them being a big touring car. The prospects for this year are only fair.

In Augusta, a nice little city, with good streets and with good roads in the outlying sections, there are probably twenty-five machines. Field & Kelly, the Rambler agents, appeared to be the only ones doing any business, and a very limited trade next season is in sight.

Savannah is the bright spot of the South, so far as automobiles go. There are over two hundred cars in the town, and with its thirty-four miles of asphalt streets, level surfaces and fifty or sixty miles of good "cement" roads, as they are locally termed in the suburbs, there are excellent prospects of good business. T. A. Bryson, the principal dealer in Savannah, has practically completed a three story brick garage, which he will formally open during the latter part of January.

In Jacksonville the prospect of business is fair. In Tampa there is one dealer only, and fair prospects for business. In Miami, although there are a number of machines in use that are owned by winter visitors, there is not a dealer in the town.

"The general business situation in the South, however, is better," said Mr. Anderson. "In Georgia one gets the strong impression that future prospects very naturally depend entirely upon the market price of cotton. At the present time they have the cotton with no demand, except at a price showing no profit for growing.

"To sum up the whole situation in a very few words, we can reasonably expect a very good business from the Southern territory in automobile tires during the coming season, reflecting a gradual improvement in the general business situation in the South."

Appersons Open in New York.

The Apperson Bros. Automobile Co., Kokomo, Ind., is the most recent Western concern to emulate Lochinvar and to plant its own standard in New York. It has leased the premises at No. 66 West Forty-third street, formerly occupied by the Brooklyn Automobile Co., and secured as manager L. A. Hopkins, the former treasurer of that company. A stock of the new Apperson cars is expected to arrive within the next week.

Diamond Handling in Denver.

Hereafter Diamond tires will be handled in Denver, Col., by the Overland Rubber Co., No. 1,735 Araphoe street, arrangements to that end having been recently effected. The Diamond Rubber Co.'s own branch in that city will confine itself to hose, belting and tires other than those for automobiles.

To Exploit Edison's Battery Abroad.

In Berlin, Germany, a company has been formed for exploiting and selling the new Edison battery. The directors of the new corporation consist of prominent bank directors and M. Bergmann, general manager of the Bergmann Electrical Society. The company will start with a capital of $75,000.

MUST BE FIRE-PROOF

So Say the Authorities About Decorations at New York Show—Cause of the Order.

Although the use of gasolene in even the smallest quantities at the forthcoming Madison Square Garden show has been prohibited, the local authorities are not satisfied with this precaution against fire. The solicitude felt by the Bureau of Buildings is such that it last week issued a warning to the management of the Garden, to the effect that the laws on the subject would be strictly enforced this year. Consequently Manager Young of the M. S. G. Co. sent a notice to each exhibitor that has caused no end of perturbation, misgivings and uncertainty. The notice in question read:

"This company has been officially notified by the Department of Buildings that all decorations in future shows must be fireproofed. Kindly notify your decorator."

Disquieting as this notice is, it does not entirely cover the case. It is not only the decorations that must be fireproofed, but everything that an exhibitor installs in his stand, the automobiles or other articles exhibited alone excepted. That is to say, the platforms, railings, signs, rugs, curtains, etc., if of an inflammable nature, must be treated to resist conflagration. This, however, is neither a costly nor a difficult task, nor do the solutions on the market injuriously affect the most delicate fabrics.

The appended extracts from the rules in force relating to the prevention of fires bear directly on the duties imposed on exhibitors. They were furnished the Motor World by the Bureau of Buildings, and are as follows:

"Numerous solutions and paints for the fire-proofing of fabrics, scenery and woodwork on theatre stages were submitted to this Bureau for test during the year. All of the samples submitted made a good showing, but no approvals were issued inasmuch as results in actual practice cannot be judged from samples. Acceptance of the treatment depends on tests made on the materials in each individual case, and a certificate is issued where the following specifications of

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this Bureau are met: In the case of fabrics, scenery and the wood frames for the same, there must be no flame or glow after the application for fifteen seconds of the flame of an ordinary alcohol lamp or torch.

"Fireproofing solutions and fireproof paints which have been tested or are being used in this borough (Manhattan), meeting the above requirements satisfactorily are made by the following concerns: Maas Fireproofing Company, Reliance Fireproofing Company, Antipyros Klugiana, Blenio Fireproofing Company, Electric Fireproofing Company, Fireproofine Company, Frank Ring, Gordon Fireproofing Company.

"Any treatment, however, that will render the material sufficiently fire-resisting to meet the above requirements will be accepted."

To a Motor World man who put the question whether these regulations, in connection with the automobile show at least, were not new, Superintendent Isaac A. Hopper, of the Bureau of Buildings, said:

"The regulations were always on the books, but under my predecessors in office were a dead letter. Since the Iroquois fire in Chicago (which occurred about a year ago) a change has taken place, until now every theatre and place of amusement in the city has been obliged to comply with these rules. All of them are inspected regularly, and if any violation of the rules is detected they are compelled to remedy the matter at once."

At first Superintendent Hopper said that it would be necessary for exhibitors to submit to him sketches of the plan of their stands and decorations—"unless," he added, "they were erected at the last show and are still standing." Reminded that everything was taken down and carried away immediately after the show last January, he repeated that it would be necessary to submit sketches to him, as the department was held responsible for any accidents that happened. The Motor World man suggested that as there were nearly two hundred exhibitors, some of them a thousand miles or more away, and as the show opens on Saturday of next week, it would be manifestly impossible to do this. At this juncture the chief engineer of the department suggested that it would serve the purpose if he gave the Motor World a memorandum of the requirements, and this was done, as already noted.

"That will inform your readers of what must be done to comply with the law. As Mr. Hopper says, if any accident happens through the platforms or railings not being strong enough to support the weight put on them, or from fire, we get the blame. Consequently we must see that everything is done right. We have a large corps of inspectors out, and if they find anything wrong they immediately notify the exhibitor and the lessee or owner of the building, and if the matter is not remedied in twenty-four hours we close the building," said the chief engineer.

"Now, our test of fireproofing consists of applying a lamp or torch to the material treated, and if it does not 'glow or flame' inside of fifteen seconds we pass it. Our inspectors will go to each stand and select at random several pieces of the fabrics or other materials used for decorations, and if they stand this test it will be considered that everything is all right. The wood and other materials used will also be subjected to the flame test.

"We do not assume responsibility for the solutions sold by the concerns whose names are given. The first three, however, do most of the work of fireproofing, and we have never had any fault to find with them; but we test all materials on the stands. We understand, too, that these fireproof solutions are non-injurious to even the most delicate fabrics."

The Week's Incorporations.

Camden, N. J.—Martin & Hart Motor Co., under New Jersey laws. Incorporators—F. R. Hansell, Joseph F. Cotter and George H. B. Martin.

Springfield, Mass.—Geisel Automobile Co., under Massachusetts laws, with $40,000 capital. Directors—Adolph A. Geisel and Theodore R. Geisel.

New York, N. Y.—The Reo Motor Car Co., under New York laws, with $10,000 capital. Incorporators—R. E. Olds, C. Andrade and R. M. Owen.

Yonkers, N. Y.—Ardsley Motor Car Co., under New York laws, with $75,000 capital. Incorporators—T. S. Fuller, F. P. Fuller and A. E. Rittenhouse.

Milwaukee, Wis.—Curtis Automobile Co., under Wisconsin laws, with $10,000 capital. Incorporators—Orin L. Curtis, Harry Landauer and Frank Thanhauser.

Syracuse, N. Y.—The Iroquois Motor Car Co., under New York laws, with $450,000 capital. Directors—Thomas W. Pelham, Frank H. Clement, Charles T. Blanchard, L. Frank Ormsbee and L. F. Mahan.

Boston, Mass.—The Peerless Semi-Pneumatic Tire Co., under Massachusetts laws, with $50,000 capital. Officers—George H. Prescott, president, and Charles P. Cummings, treasurer.

Augusta, Me.—Leitch Manufacturing Co., under Maine laws, with $40,000 capital, to manufacture and deal in carriage and automobile bodies, also motor boats. Officers—I. L. Fairbanks, president and treasurer.

Port Chester, N. Y.—The Mianus Motor Works, under New York laws, with $100,000 capital subscribed. Officers—George Gray, president; Frederick A. Hubbard, vice-president; August P. Avery, secretary; Charles B. Allyn, treasurer.

Brooklyn, N. Y.—The Edmunds & Jones Mfg. Co., under New York laws, with $6,500 capital, to manufacture automobile and coach lamps, generators and sheet metal work. Directors—George Edmunds, William G. Jones, George Roberts, Edward C. Humphreys and Harry W. Brooks.

The Macks in Allentown.

The most recent addition to the industries of Allentown, Pa., is the Mack Bros. Motor Car Company, a concern incorporated last year with a capital of $300,000 to manufacture commercial vehicles. The concern has just purchased the plant of the Weaver-Hirsch Foundry and Machine Company and will at once move in and begin active operations. It is stated that enough orders are in hand to keep the plant busy for a year.

The company proposes to confine its efforts solely to the manufacture of such commercial vehicles as motor cars of large sizes for sight-seeing and passenger purposes, express, brewery and other trucks of large carrying capacity, equipped with motors capable of producing from 50 to 100-horsepower or more as may be desired.

Their motors, it is added, "will revolutionize the manufacture of motor cars in this country; the details of their construction are vastly different and superior to all others."

The officers are Jos. S. Mack, president; Jos. Mack, treasurer, and Leo E. Schimpff, secretary.

Jobbers Big Increase of Capital.

The New York Sporting Goods Co., the news of whose entry into the automobile supply trade was published exclusively in the Motor World last week, will not take possession of the building No. 17 Warren street, New York, which they have leased, until May 1 next. Until then business will be done at the present address, No. 61 Nassau street, which later will be continued as a retail store. Concurrent with their decision to enter the automobile trade, the capital stock of the company has been increased from $5,000 to $100,000. The added capital will be used in the automobile department. The officers of the company remain as heretofore, viz: President, P. R. Robinson; vice-president, Richard Nelson; secretary-treasurer, James E. Murray; directors, A. R. Robinson, Thomas F. Barnes and Roger F. Murray.

Bailey Remains True to Rambler.

The F. O. Bailey Carriage Co., of Portland, will handle the Rambler in the State of Maine during 1905. Last year that well known car was controlled by the Maine Motor Carriage Co., which practically was the Bailey company operating under another name. When they were this year given their choice of relinquishing either the Rambler or the other cars for which they held the agency, they elected to stand by T. B. Jeffery & Co., and will therefore devote themselves to the Rambler exclusively.

To Handle Mitchells in Milwaukee.

Three Milwaukee (Wis.) business men have formed the Curtis Automobile Co., with a capital of $10,000, and will conduct a sales and garage business in that city. Arrangements have been made to handle the Mitchell line, and a garage will be opened on Grand avenue. The principals are Harry Landauer, buyer for Landauer & Co.; Frank Thanhauser, manager at the same company's establishment, and Orin L. Curtis, a draftsman.

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IMPORTANCE OF KNOW-HOW

How it Cuts an Unusually Large Figure in Automobile Trade—An Apt Illustration.

"In nearly all businesses it is the 'know how' that is of the greatest importance and possesses the most value. You may be ever so industrious and conscientious, but if you don't know how it is largely a matter of luck whether you meet with any success at all when you tackle even an easy proposition." The speaker was the Eastern travelling representative of a large Western maker, who had been discussing some troublesome phases of the industry with a Motor World man.

"Frequently the most puzzling source of trouble in a car is really the most obvious, and if the man who was at work on the car had used good judgment he could have put the car to rights in a tithe of the time he spent on it. In such cases the question arises, How much shall I charge for this job? It seems plain that, say, ten hours' time should not be put on the bill when half an hour would have been sufficient; yet it may have been actually spent, and some one must pay for it.

"Now, my plan is to always look for the most obvious source of trouble at the beginning. Three times out of five that is where I find it. But one must have, in addition to knowledge and experience, a generous supply of 'gumption,' and be able to tell almost by intuition whether he is on the right or the wrong tack. Lastly, he must take an interest in his work. If it is a labor of love, the chances of success are much greater than if the work is gone about in a perfunctory way.

"When I began to study the automobile business I came to the conclusion that a superficial knowledge of it would not do. So I took a course in the theory of the gas engine. Then I went to the factory and worked at the bench for several months. Next I went on the road and got in touch with both dealers and users, so that by this time I was able to view the industry from all sides. Then I was put to work 'rounding up' difficult cases. If there was a car that wouldn't run and the local repairing talent could not make it go, I was sent to the spot and given the task of putting it to rights. I would go north into Canada, and east, south and west, and I met with an immense amount of success, simply because I used my head and examined the parts the local men had passed by as not being worth looking after.

"There was one case that looked as if it might stump me as it had everybody else; but it actually proved very simple and scarcely worth mentioning except for the trouble it had given and the amount of work that was charged against it.

"It appears that one of our large agents had a customer whose car was of no use to him. For three or four weeks it had been worked over, taken apart, put together and then dissected again; but all to no purpose, for it obstinately refused to run. The engine was taken apart and set up again. Every bit of the wiring was renewed and new batteries put in; but all to no purpose. Go it would not. A repair bill of $30 or $40 had been run up, without a cent's worth of good having been done. At last, in despair, they sent to the factory, and the latter directed me to go there and see what the trouble was.

"I arrived, listened to the tale of woe and made some mental notes. Then I took a look at the car. I tried half a dozen things and found them all right. But certainly the engine would not run. I could not get even an explosion out of it. This puzzled me a little, for usually in such cases something wrong is found quickly. But I persevered, and a few minutes later I found it. The engine was timed wrong, and it never could have been made to run until that was fixed. In less than half an hour I had everything put to rights and the owner almost fell on my neck, so filled with joy was he. A more crestfallen set of repairmen you never saw. They expected to see me fail, as they had done, and were ready to laugh. But I had all the merriment on my side."

Its Load too Heavy for Truck Company.

Acting on the application of creditors of the Union Motor Truck Company of Philadelphia, Judge Mitchell, in the Common Pleas Court of that city last week, appointed George DeB. Myers receiver for the Union Motor Truck Company, manufacturers of automobile trucks. The company was admitted to be insolvent by its president, John P. Murphy. It is a West Virginia corporation, capitalized at $500,000. Its liabilities were fixed at $6,000, and the assets, including patents, at $4,000. The Diamond Drill and Machine Company and Clement & Sons were the petitioners.

The Union Truck Company has for several years been engaged in perfecting a gasolene truck embodying a number of original but very complicated features. In both the 1903 and 1904 commercial vehicle contests held in this city the concern entered trucks, but they performed only fairly well.

Pope Fixes His Prices.

The price of the new two cylinder Pope-Hartford car, about which there has been some little speculation, finally has been set at $1,600. Its "cousin," the two cylinder Pope-Tribune, will list at $900. The idea that prevailed that these cars replaced the single cylinder models of the same titles proves to be erroneous; the new models are simply additions to the Pope line, which will be marketed in connection with the single cylinder cars.

Eldridge Re-enters the Trade.

W. E. Eldridge, former manager of the Pope Motor Car Co.'s Boston branch, has engaged with the big Tremont Garage, of that city. His new duties will enable him to make the most of the Buick agency, recently secured.

VEEDER REACHING OUT

Making a Big Bid for the World's Trade—The Arrangements Already Effected.

If the Veeder odometer does not dominate the foreign market almost as completely as the Veeder cyclometer has dominated it for many years, it will not be for lack of effort to that end. Living evidence of this effort is at present in Europe in the person of H. J. Boon, head draughtsman of the Veeder Mfg. Co., of Hartford, who is visiting the principal automobile manufacturers of England and Continental Europe, obtaining the necessary drawings and information to enable the company to manufacture fixtures for applying Veeder odometers and tachometers to their cars. He already has arranged to have the special attaching fixtures for foreign cars manufactured in Paris.

Mr. Boon was in charge of the Veeder exhibit at the Paris show, and during the exhibition he obtained drawings or sketches of the wheel and knuckle construction of all the cars that were shown. During the show two of the Veeder form D, or dashboard, odometers were shown, one applied to a Renault and the other to a Mors dash. The instruments were shown attached to the wheels, just as they would be on the cars, and as the wheels revolved, the readings in kilometers were shown correspondingly on the dashboards. The Veeder form B odometer, a gear driven instrument which attaches to the steering knuckle, was shown on a Darracq wheel, which was likewise revolved.

The Veeder tachometers or speed indicators were shown in two sizes, the six inch scale and the 12 inch scale. As in the case of the form D odometers, they were shown on the dashboards of cars. The wheels were revolved, and the tachometers gave readings in kilometers, according to the speed at which the wheels revolved to which they were attached.

Winans Gets Michelin Rights.

E. D. Winans, who formerly was connected with the United States Agency, Michelin Tire Co., is himself now the possessor of the Michelin rights for the larger part of the Western Hemisphere. He returned from Paris on Saturday with the necessary document in his pocket conveying to him a perpetual license to vend Michelin tires in the United States, Cuba, Mexico and Central and South America. Meetings are being held this week for the purpose of organizing a company that will make the most of the license. Incidentally, Winans states that representatives of the parent company are now en route to this country to consult with their counsel, Coudert Brothers, respecting the allegement of Michelin's infringement of the G & J rights, which is now pending in the United States courts.

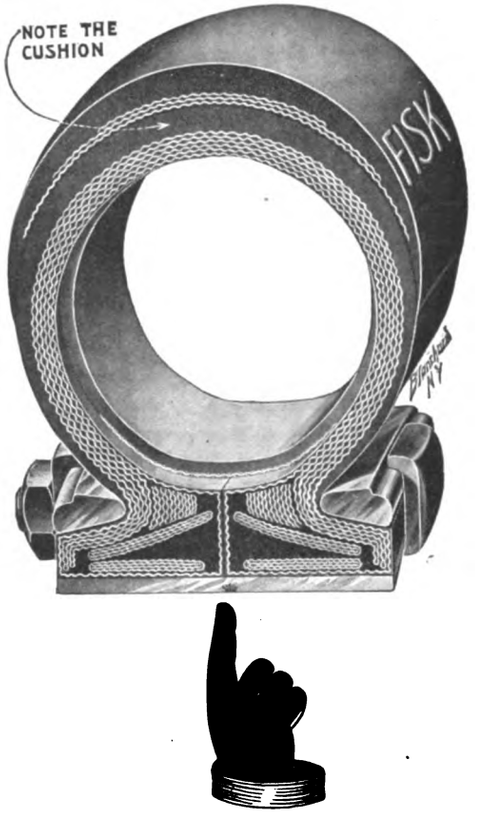
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1905

Will be the

"Mechanically Fastened Year."

You All Know Why.



THE SUCCESS OF THAT TIRE,

the manner in which it has solved the tire problem and reduced the troubles and the cost of tire maintenance simply has compelled acknowledgment.

SUCCESS ALWAYS BEGETS IMITATION.

The Fisk was first—it is still in front. It is the only mechanically fastend tire that actually has stood the test of time. It has left off where the others are but just beginning.

The Fisk Rubber Company, Chicopee Falls, Mass.

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The New York Show Numbers of the Motor World will be of date January 12 and 19. As always, they will deal with the Show in comprehensive fashion, and, if anything, will be even more than usually informing in character.

Beware of Spurious 1905 Model!

Advices of a thoroughly trustworthy character indicate that the time has arrived when extreme caution should be exercised in the purchase of foreign cars—caution that should be particularly wide-awake during the continuance of the shows.

That not all of the European manufacturers were able to entirely dispose of their 1904 product is common property. It is not so well known that America is considered the most likely "dumping ground" for this surplus, and that quite an influx of well-groomed, well-spoken "dumpers" who will put up at expensive hotels is due to reach these shores at about show time. Some of them will assist agents already appointed, while others will seek to appoint agents and to make sales direct to individual purchasers.

The game to be played is the working off of the old cars as 1905 models. Already it has been attempted in this city. In one instance the sale of three cars actually was effected, and only the awakened victims' threat to air the matter in the courts served to prevent exposure. How many cases of the sort remain undiscovered is, of course, not known. It is certain, at any rate, that the foreigners have a number of 1904 cars that must be disposed of, and that America is due to receive their solicitous attentions.

In the absence of other assurance, probable purchasers will do well to obtain or examine the serial numbers of any foreign cars that may be offered them. There usually is a considerable lapse between the numbers of the 1904 and the 1905 models, and a low number on an alleged 1905 car should afford grounds for immediate suspicion.

Side Entrances and Mud Guards.

About two out of every three of the popular side entrance cars now being unveiled are marked by an arrangement of mud guards and step combined. The step almost invariably consists of a single piece of planed board, reaching from one mud guard to the other, and affording an easy and safe means of stepping into the car. In carriage construction much the same effect is obtained by employing the step of a victoria or similar vehicle to connect the two mud guards. In the latter case, however, the step is much shorter, besides being made of iron or steel and finished like the remainder of the ironing of the vehicle.

With the automobile step referred to, however, its utility alone commends it. Its appearance is anything but pleasing. It looks crude and clumsy, even unfinished and quite out of keeping with the remainder of the vehicle. Already unfavorable comment has been aroused, and prospective purchasers have expressed wonder that so unsightly a piece of work has been allowed to slip through and invite criticism. A very little time and money would have made everything right. But the wood is rough instead of smooth, and paint and varnish seem to have been applied sparingly, with the result noted. Even now it is not too late to apply a remedy and thus prevent the belief getting about that the cars referred to are hastily constructed and cheap looking.

Of some of the side doors themselves, it is fair to assume that their designers are skilled contortionists, and that they fancy that the rest of mankind and womankind are possessed of the same agility and suppleness of joints. The size, shape and position of the doors suggests nothing else.

Tires and Horseless Nonsense.

Some men wear whiskers because they believe them to be becoming; others wear them because they are too lazy to shave or too stingy to patronize the barber. Some men are given to chasing rainbows; others are given to dealing with things as they exist. Some men want tires that never will give trouble, that never will puncture, that never will require to be removed from the rim, and with such tires they desire the speed and comfort that can be obtained only with pneumatics. How such tires are to be obtained they have not the remotest idea, nor do they attempt suggestion. They simply yawp and chase the rainbow.

These observations are born of the yawpings of the Horseless Age on the tire question—which really is no question at all. The man who desires no trouble and no comfort should employ steel tires; he who desires a little more comfort at the expense of a little more trouble should use solid rubber tires, but he who would have real comfort must use pneumatic tires, and until the Horseless Age or some other rainbow chaser finds a means of carving a circle of air out of the atmosphere and of securing it to a rim, such men will be content to use air as it is confined in the other most elastic material, rubber. And as rubber will puncture and wear, the man whose sense is not of the horseless species and who values his comfort, will recognize that facility for securing such tires to rims and for removing them therefrom is of vital importance.

Fact vs. Fury.

If the stranger in New York who had occasion to run over the files of certain of the city's newspapers for 1904 failed to obtain the impression that the automobile was not a juggernaut that daily slaughtered man, woman and child, he would prove an interesting exhibit for a museum of natural history.

The reams of paper and gallons of ink that have been devoted to making the automobile appear a demoniacal instrument of death and destruction have been not short of remarkable. The ink has fairly scorched the paper, so heated have been some of the editorial utterances on the subject.

How sound are the bases on which they

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were founded is shown by the Police Department's report of homicides that occurred during the twelve months. Excepting murder, they were as follows:

Building accidents, 3; automobiles, 7; derricks, 5; runovers (wagons), 62; building elevator accidents, 21; runovers and other accidents caused by cars of Interurban Co., 51; killed by cars on Brooklyn Bridge, 3; accidents on lines controlled by Interborough company, 12; killed by New York Central and other roads running into Grand Central Station and along Eleventh avenue, 20.

Of the seven deaths charged to automobiles three occurred at the same time. A drunken chauffeur drove over an embankment at midnight, and, with two of his carousing companions, was killed.

The table proves how little real substance there is in the rabid frothings against automobiles. It is chiefly sound and fury. Of course, sound attracts a crowd, and if it is ominous, the crowd will become fearful and shudder, and this is exactly the situation as regards automobiles. It is the same unreason that but a few short years ago inspired many reputable editors to volcanically assert that bicycles were juggernauts and that their riders were little short of demons seeking whom they might slay. Very many people believed it. And yet common sense would have told any of them that for any man on a bicycle to strike a human being or other obstacle meant that the cyclist himself would fall and be the most likely sufferer. It is the same unreason that causes people when they hurry out of the way of an automobile to feel offended or to fancy that they have been endangered, although daily they may and probably do jump out of the way of a dozen wagons or streetcars and not give the matter a second thought.

It really does seem about time that the thinking writers who "mould public opinion" should rid themselves of their own fears and cease playing on the fearfulness of the populace. Not one man in a million, it matters not what manner of vehicle he may guide, intentionally runs into another man. The aim of every driver is to avoid accident, and as an automobile cannot guide itself, its driver's eyes are always open and his senses alert, which, however, is more than can be said of many drivers of horses. The sight of the honest farmer and the city truckman asleep at the reins is not rare.

What is needed is less sound and fury and more cool common sense when automobiles are discussed. Such statistics as those here quoted from the New York Police Department's report plead for it most eloquently.

Why Powers Increase.

Powers and prices appear to be tightly linked in a skyward movement, the end of which no man can tell. For several years we have all been predicting that powers would go no higher; that already they were too great to be used to their full capacity on the average road. But this is theory, and the facts are just the other way. Powers are still increasing, not only here, but abroad. This is because users find that it is a good thing to have a reserve of power, even if they employ it only occasionally. It not only gets them out of tight places but enables them to bid defiance to hills and heavy or bad roads. They do not have to use all the power at their disposal, but it is found that an engine that is never run at its capacity will last longer and give better all-around service than one that is forced to deliver its full quota of power at nearly all times. Bridges are built to carry several times as much load as will ever be imposed on them. Foundation walls and buildings generally have the same excessive factor of safety, and no one attempts to question the wisdom of their designers. That automobiles should have some reserve power is hardly to be questioned.

Woodbury's One-Sided Selections.

It is always interesting and sometimes instructive to discover the reasons actuating the selection of a particular car. The reasons inducing the purchase by the City of New York of two foreign cars for the use of its Street Cleaning Department are of the instructive sort. When the able head of that department, Dr. John McGraw Woodbury, applied for the necessary appropriation of $5,000, a considerable ado was made over it by the daily press. It caused the importers to chuckle in their sleeves and out of them and considerably discomfited the home trade. It induced the Motor World to interview Dr. Woodbury, with the result published in another column.

None can read his comments without being convinced that that gentleman has condemned the American product on insufficient evidence. He is of that quick, nervous, impatient temperament that cannot brook petty troubles. He has made mountains out of molehills. If he fancies that foreign cars are free from such ills as broken springs and steering knuckles and clutch troubles, he is due for a rude awakening, unless he is prepared to forgive them as "acts of God." His selection of an Italian car is evidence of influence brought to bear on him, for, as a matter of record, the one public performance of that particular vehicle is a record of failure. In the Vanderbilt Cup race two of those cars started, and they were among the very first to go down and out. It took hours for a skilled machinist to induce one of them to run, and then it ran less than thirty miles. The other failed inside of ten miles. Eleven other foreign cars failed to complete the course, and even the particular French car which finished first, sustained broken springs. So much for Mr. Woodbury's assertion that foreign cars "run all the time." His statement that, although one American car did give full satisfaction, he put it aside because of its price in favor of a second hand foreign vehicle, and apparently without attempting to discover whether a used model of the American product could be similarly purchased is one other fatal flaw in the Woodbury argument.

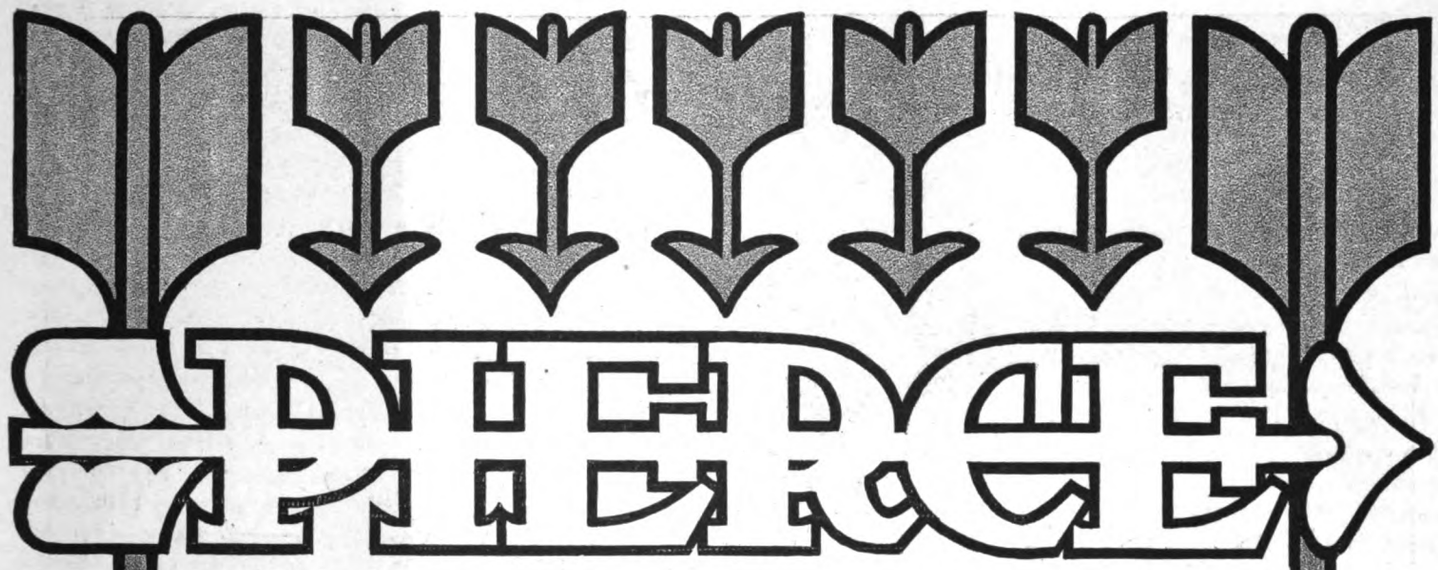
There is no doubt of the Commissioner's honesty and interestedness, but despite the fact, it is as patent that he has not been wholly fair to the industry of his own country. He has given it a nasty and undeserved slap in the face.

Value of Good Photographs.

First impressions are valuable. In creating them nothing is more immediate or more potent than pictures—good pictures. It will be well for manufacturers of automobiles to keep the fact in mind, as not all the photographs of new cars that have appeared can be termed good, even by a stretch of courtesy. It is an open question whether these pictures have not done the cars some harm.

There really is small excuse for poor photographs, and no economy is so false as that which stints their price. At this season of the year, when snow is on the ground, polished surfaces, such as the sides of a car, reflect the whitness, and some weird effects have resulted. This and poor light and backgrounds which afford no contrast are the chief faults of many photographs of 1905 models that have reached us. Dull, unimpressive illustrations are the result. Per contra, other photographs are not short of magnificent—big, clear cut, highly finished, and every line well defined. The very sight of them inclines one favorably toward the cars.

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PIERCE CARS IN 1905

The award of the Grand Prize at St. Louis to Pierce automobiles but confirms a progress that has been steady and conclusive for five years.

On their 1905 cars the George N. Pierce Company asks no odds of anybody here or abroad.

The output in 1905 will be confined to six designs and three mechanisms.

The first mechanism is the 28-32 H. P. Chassis mounted as follows:

The Great Arrow, side entrance, King of Belgium type Tonneau, $4,000.

The Suburban, - - $5,000
The Landaulet, - - - 5,000 } Enclosed Bodies by Quinby.
The Opera Coach, - - 5,000

The second mechanism is the 24-28 H. P. Chassis four cylinder, side entrance, King of Belgium type Tonneau, $3,500.

The third mechanism is our well-known single cylinder Stanhope 8 H. P. $1,200.

These cars are the result of a progress that has studied every step of the design before making the change. Some of the differences from other cars are radical, but the evidence of some of the best automobile designers is with us.

Pierce cars will invite a special study at the Automobile Show in New York City in January.

THE GEORGE N. PIERCE COMPANY, Buffalo, N. Y.

Manufacturers of Pierce Cycles.

Members Association of Licensed Automobile Manufacturers.

FOR SALE BY

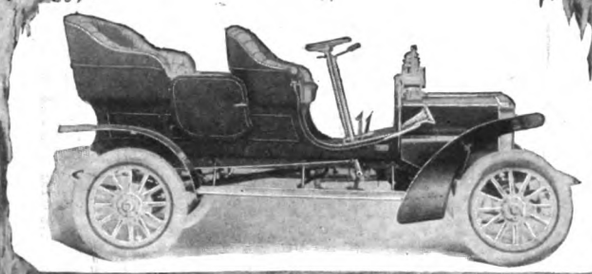
DOWLING & MAGUIRE, Boston Mass.
R. W. WHIPPLE, Binghamton, N. Y.
H. PAULMAN & CO., Chicago, Ill.
THE GEORGE N. PIERCE CO., Denver, Colo.
STIRLING AUTOMOBILE CO., Detroit, Mich.
N. L. BIEVER, Derby, Conn.
ELMIRA ARMS COMPANY, Elmira, N. Y.
WATERMAN BROS., Fresno, Cal.
J. A. PLACE, Geneva, N. Y.
EAST COAST AUTOMOBILE CO., Jacksonville, Fla.
L. H. JOHNSON, Los Angeles, Cal.
THE GEORGE N. PIERCE CO., Oakland, Cal.
WILSON & CO., Ottawa, Canada.
BANKER BROS. CO., Pittsburg, Pa.
H. J. WILLARD, Portland, Maine.
R. V. CONNERAT, Savannah, Ga.
C. P. JOY AUTOMOBILE CO., St. Paul, Minn.
MOBILE CARRIAGE COMPANY, San Francisco, Cal.
STANDARD MOTOR CAR CO., Scranton, Pa.
WESTERN AUTOMOBILE CO., St. Louis, Mo.
M. C. BLACKMAN AUTOMOBILE CO., Syracuse, N. Y.
MILLER-MUNDY MOTOR CAR COMPANY, Utica, N. Y.
CENTRAL AUTOMOBILE EXCHANGE, Worcester, Mass.

NEW YORK AUTOMOBILE SHOW, Center Aisle, Section F;
CHICAGO AUTOMOBILE SHOW, Spaces Nos. 49, 50, 65 and 66.

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NORTHERN AUTOMOBILES

Good in all Climes





Silent as the Snow

is the operation of the Northern Touring Car. The plans of this superb vehicle called for the elimination of all noise and vibration, and every part has been carefully worked out with this end in view.

That the result aimed at is fully attained, the car itself proves.

THE NORTHERN TOURING CAR IS THE QUIETEST, EASIEST RUNNING CAR IN THE WORLD.

The motor is a 5¼x5½ two-cylinder of the opposed type, developing ample power to take the car anywhere an automobile can go. Wheel base is 100 inches, with wheels fitted with 30x4 detachable tires. Tonneau is of exceptional size, seating three passengers. Choice of four different bodies. Two-passenger body, a powerful, speedy machine, $1,500. Four or five passenger, rear entrance, $1,600, and four or five passenger, side entrance, $1,700; and, lastly, a superb limousine body, $2,500. All styles interchangeable.

WRITE FOR CATALOG 16.

The "Sturdy Northern" Runabout

long ago justified its name. With ample reserve power, strongly built and with body hung on swivel entirely independent of the frame, rough roads and smooth roads are alike, so far as riding qualities go. Its record in the hands of thousands of users all over the country proves its durability and efficiency under all conditions.

THE 1905 NORTHERN RUNABOUT, grown in everything except price, embodies all the features suggested by experience and the advancement of the art of automobile construction. Among the improvements are new body design, larger fenders, larger oil cups, full back moulded seats and numerous detailed refinements of working parts.

Largely increased facilities make it possible to now offer this sturdy, ideal "Runabout" at $650.

The NORTHERN meets the demand for a sturdy runabout, simple in construction and operation and durable enough to withstand all demands upon it, more fully than any other runabout on the market.

A WINNING PAIR WITH WINNING WAYS.

It will pay you to get in touch with NORTHERN Automobiles.

NORTHERN MANUFACTURING Co.

DETROIT, MICHIGAN.

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Science as Applied to Automobiles.

Science is at the bottom of all structures, whether it is so recognized or not. Very often science is reached backwards, by "rule of thumb" methods and actual experience. It is possible to see, when the thing is accomplished, where the science comes in; it was not possible before.

The application of science to a structure called upon to carry a simple dead weight or load is the simplest thing in the world. For example, the weight and thickness of the plates of a tank necessary to contain a given amount of water, and, in turn, the weight and dimensions of the columns that will be called upon to support this tank. When the structure is called upon to carry moving loads, science enters with greater difficulty. For instance, a bridge called upon to bear the strain of a wagon and a pair of horses jolting over the rough planks. A factor of safety must be allowed to accommodate this uncertain incalculable load. This factor of safety is another name for a guess, an estimate. After all the figures are carefully drawn on a scientific basis to carry a given dead weight, then they must be multiplied by 4, 5 or some other number, which is a matter of estimate, a guess, to make the bridge safe.

Going one step further: Take the locomotive running upon a smooth set of rails and subjected to comparatively few jolts and jounces. Here the factor of safety is a different one from that of the bridge or tank. Science was used in designing a great many parts of the locomotive, but empirical or practical knowledge was called in for as many more parts in the shape of a factor of safety of varying quantity.

In the bicycle all ordinary rules of mechanics were thrown aside and the factor of safety was made smaller than it was ever before made in any machine. Science was brought into it in several, but comparatively few, places. Much was done by the process of elimination—by building model machines which, in the opinion of their builders and designers, were sure to fail, and which did fail in parts. Another model was then built, and that part or parts strengthened which had given out. In this way the lightest possible machine was arrived at. Such a method does not seem scientific, nor is it under a strict interpretation of the word "science." At the same time, it was the only way, and men of science actually conducted the experiments mentioned. It was not possible to sit down and take the formula given by our best text books and design a bicycle that would be salable. Pure theory absolutely failed, as it almost always does fail. But a knowledge of theory coupled with a wide experience is sure to win out in the end.

The automobile resembles the bicycle in this respect. The strains it is called upon to bear are immeasurable, incalculable and not possible to foresee. The average automobile gets into the ditch sooner or later, and the owner of it is not pleased if it does not come out of the ditch and go along about its business as if nothing had happened. A wheelbarrow is not submitted to such punishment as is the automobile. The unexpected culvert in the country road, the rain-worn gully, throws a strain upon an automobile that can be no more measured by scientific methods than the strains involved in a railroad collision.

Take, for example, the wheels of an automobile. Gradually we have arrived at wheels that do good work, and certainly not by sitting down and figuring out the size of the spokes, the rims and the hub by formula. The axles have been guessed at, to put it plainly. The wheel bearings have been under scientific control to a certain extent—that is, the plain journals have. The bearing surfaces have been made to apply approximately, at least, to the accepted practice of railroad and engine construction.

Scientific calculation of the dimensions of a spring would not produce a good set of springs for an automobile, simply because the load that is coming upon those springs cannot be measured or calculated. One can only guess at it.

The frame of an automobile cannot be figured, simply because one cannot know the strains that are coming upon it. The engineer has guessed at suitable dimensions. Some of them have guessed rightly and some of them wrongly. The proportion of failures have been comparatively few. Good frame design will be evolved, not from scientific formula, but from the experience gained from those now in service.

There are some points, though, in automobiles where science will come in, and come in very strongly. It will play a part in automobile design just as much as it has in steam engine design, in boiler practice and in the burning of coal or other fuel under boilers. The same problems exist in the automobile and must be answered along scientific lines, if at all.

To-day the right shape of an engine cylinder to get the best efficiency from expansion and explosion is in dispute. One engineer claims one shape, another one radically different. One is probably right or certainly better than the other. Which, can only be determined by investigation, and very careful investigation at that. Quite as much work must be put upon this problem as has been put upon similar problems in steam engine design.

It is probable that most of the gasolene consumed to-day in automobile engines is not consumed to the best advantage, either because the carburetter is not all that it ought to be or for some other allied reason.

The degree of water cooling possible for any given amount of power is in question, and quite properly so. All the heat carried away and dissipated by the water and the radiator is lost and there is no doubt about that. Some of the heat of the gas engine ought to be carried away, and must be carried away by radiation into the air or into water, but how much is the question. Water cooling or air cooling may be carried perhaps to too great an extent. The efficiency of the engine may be seriously cut down. Only careful scientific, practical investigation can determine these points.

The degree of compression in an automobile engine creates no end of discussion. Theoretically, the higher the compression the more power. Practically, this is not so, because of practical reasons. Overheating takes place, premature explosions take place, and more efficiency is lost by undue increase of compression than is gained. There is a midway point somewhere that can only be found by careful investigation along scientific lines.

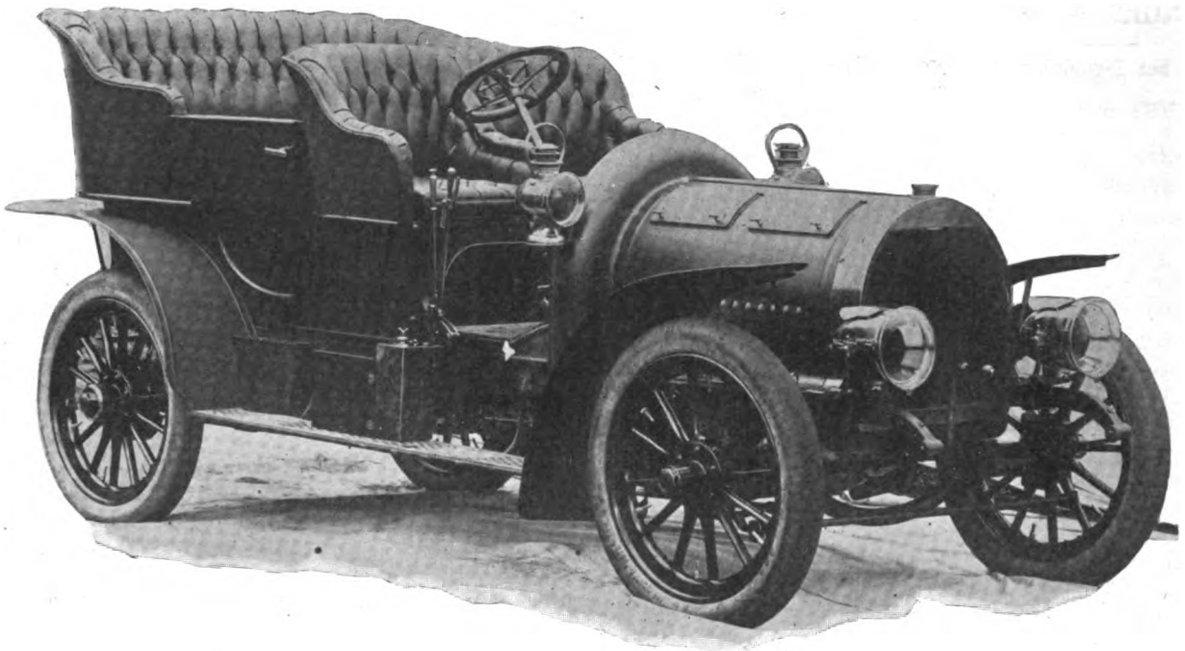
The size of exhaust valves and inlet valves, their location in the engine, as regards each other, and cooled surfaces are talked of, each man having his own idea. Just the proper arrangements and dimensions will be decided by careful investigation, and in no other way.

It was assumed by a great many that because certain manufacturers had made bicycles in years past, and brought them to a high degree of perfection, that they could jump directly from the manufacture of bicycles of a perfect type to automobiles of a perfect type. The size of the problem confronting them was not properly realized. The automobile is a most complicated structure, called upon to endure more punishment than any other vehicle of transportation.

If no scientific investigation is undertaken, the points in question will gradually work themselves out after a long period of years. Schools and colleges will take up the investigation suggested after a while, when they learn that there are such problms. Scientific study will be obtained in that way.

But, if the manufacturers would only take up this same line of investigation when the time is ripe, much more could be obtained in a much shorter space of time. Moreover, the manufacturer standing back of and close to such investigation can do far more efficient work and reach much more practical results than any scientific school can possibly do. The school is not close enough to the industry and the practical side of it. It

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THE FOUR CYLINDER ROYAL OF 1905.

works its experiments out along lines too scientific. There is no practical man around to hold the scientist down.

The scientific results obtained are studied by the practical men, and finally a commonsense result is arrived at, or a commonsense interpretation of the results is found.

Science has plenty of chance in connection with the automobile, but the best results will be obtained by a combination of science and practice and a systematic series of investigations into the vital prolems of the industry.

One of the most common errors in designing is to try to formulate something where there is nothing to formulate. Most of the few real failures in automobile design may be traced to the use of too many scientific formula, and not using the results of practical experience. The problems are so complex that scientific formula cannot be applied. A Belgian engineer tried to design entirely from scientific formula and made a 7 H. P. automobile that weighed 2600 pounds.

It is quite as useless to attempt to apply scientific formula to automobile design as it is to measure bricks with a micrometer. It may look scientific, but it is not.

HENRY SOUTHER.

Some Illuminating Facts.

In prosecuting their work of establishing their chain of depots at which their Prestolite tanks charged with gas may be bought or empty tanks exchanged for full ones, the Concentrated Acetylene Co., Indianapolis, have met with marked success. They have already appointed 106 agents between New York and Denver, all of whom will carry the tanks in stock. With 700 tanks in use during October, November and December, it was found that the average time of service—that is, before recharging was necessary—was seventy-two days.

Reproducing the Mercedes.

In the endeavor to build an exact replica of the 1905 Mercedes the Daimler Mfg. Co., who hold the American rights, have found it necessary to import a number of parts and some of the raw materials from which other parts are made, due, they say, to inability to induce steel makers of this country to produce the necessary alloys.

For example, the crank shafts will be of nickel steel from the makers supplying the parent company. The axles, gears and gear shafts will be forged from a special imported steel, identical also with that used in the Cannstadt Mercedes. The aluminum castings will be of practically the same composition as, and of equal strength to, those used abroad; and the small parts of steel and bronze will be required to stand the same tests. Even the radiator tubes are being made thinner than anything yet attempted by American makers, in comformity with the gauge of the originals.

In certain vital parts of the machine the actual parts made or used by the parent company have been imported. Thus, the axles will be not only of the same steel, but from the same forge shops and the same dies as those used by the parent company. The same is true of the steering gears and the ball bearings, which, used throughout the transmission system, are by the Daimler people said to constitute "one of the secrets of the extraordinary efficiency of the Mercedes cars."

Enormous Growth of French Industry.

The Chambre Syndicate de l'Automobile has just made a report to the Council of State on the growth and present extent of the automobile trade in France during the last few years. In 1898 French makers delivered 1,850 automobiles; in 1904 they delivered 22,000. The total value has grown from $80,000,000 francs ($16,000,000) in 1898 to 176,000,000 francs ($35,200,000) in 1904. The value of exportations in 1898 was 1,750,000 francs ($350,000); in 1904 it was 74,000,000 francs ($14,800,000).

Salaries now paid amount to 80,000,000 francs ($16,000,000). The industry employs 55,000 workmen, 25,000 miscellaneous employes and 20,000 chauffeurs and machinists.

Gives Cup to Encourage Body Building.

Recognizing that the increasing demand for comfort in automobile bodies is so rapidly adding to their weight that it is almost impossible for the manufacture of pneumatic tires to keep pace with the growing loads, M. Michelin has offered a trophy, to be known as the Michelin Cup, which shall be awarded to the constructor of the lightest automobile body for real touring. The body must have been run over a certain distance, and due regard paid to the matter of suspension. The cup has been accepted by the A. C. F., and a committee of selection is about to be formed. The cup will be of the value of $5,000.

Norwalk Has Visions of a Factory.

Negotiations are reported to be in progress between a "very desirable automobile concern," name not given, and a Norwalk (Conn.) business man, looking to the removal to that town of the plant of the concern. The latter is described as being desirous of increasing its output, and needs more factory space for that purpose.

Beginning January 1, S. T. Klingensmith took over the duties of superintendent of the Keystone Automobile Co., of Pittsburg. He was formerly in charge of the branch of the Lake Side Battery Co., of Chicago.

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CHANGES IN MERCEDES

Many Small but Significant Alterations Mad and Several Innovations Adopted.

The much-talked-of 70 H. P. Mercedes model has made its appearance on "the other side," and while it contains no sensational departures from the standard Mercedes practice, there is embodied in its construction a number of interesting features that are being commented on, particularly in French manufacturing circles. The car is unusually large; it is designed for a wheel base of from 86 inches to 101 inches, while the track is 56 inches.

The new features of the engine are that the two cylinder castings are further apart than usual, that the gear wheels (which are now fitted in front instead of behind) are enclosed in an aluminum casing, that the governor gear is, in consequence, slightly modified, that larger valves are used, that the igniters are fitted to the cylinders at an angle instead of on the side, as formerly, and that the cam gear operating them is entirely cased in. It is, moreover, designed to run at a higher maximum speed than previous engines—at 1,400 instead of 1,100 revolutions per minute—and all the bearing surfaces are proportionately larger. A special characteristic of the low tension igniters is that the insulated terminal can now be removed separately for cleaning, and that there are small pet cocks (for introducing gasoline to the contact points) arranged above the igniters in the cylinder heads, in addition to those fitted centrally above the cylinders.

A peculiar innovation is the provision of small spring-loaded valves in the top of each water jacket, which presumably serve the double purpose of relieving the pressure, should any steam be generated in the cooling system, and of enabling all air to be let out when filling up with water.

A considerable change has been made in connection with the lubricating system, which is now rendered automatic by the introduction of a mechanically driven pump, of the gear-wheel type, that supplies the required quantity of oil to all the bearing surfaces, and dispenses with the "splash" system.

Another important improvement is that the sliding exhaust cam shaft, which reduces the compression in all four cylinders, is automatically operated by the starting handle itself; the mere action of pushing the handle back into its engaging position renders it quite easy to turn the crank shaft.

The method of controlling the engine has been materially modified, and although the carburetter acts in very much the same way as before, yet a disc valve has been substituted for the piston valve. The throttle valve is now connected with the clutch pedal, so that the power of the engine is automatically reduced when the clutch is withdrawn, while an accelerator pedal is now provided for having a converse effect when depressed.

Owing to the increased length of the frame, and to the desirability of keeping the side chains reasonably short, the differential counter-shaft and the bevel wheels driving it are no longer contained inside the change-speed gear-box, but have a separate casing of their own which lies some little distance behind the gear-box. The position of the change speed-gear itself remains unaltered, and its design is practically the same as before. The gear-lever, however, is arranged so that it is drawn back towards the driver for the "second," for the "third," and for the "reverse" gears, while it is pushed forward, in the alternative slots, for the "first" and the "fourth" speeds—an arrangement which is a return to previous practice.

Perhaps the most ingenious innovation is the provision of an automatic sprag of the pawl-and-ratchet type, on the counter-shaft, which has already been referred to in these columns. This is so arranged that the pawl only comes into contact with the ratchet wheel when the car begins to move backwards, and that the pawl is, further, automatically lifted up out of the way when the reverse gear is introduced. This sprag device consequently needs no attention from the driver, and although it is always ready to come into action, yet—unlike most devices of its kind—it is quite silent. The pawl is normally controlled by a fibre friction wheel fitted on the counter shaft, and its connection with the reversing gear is made by a simple rod that forms a continuation of—and is hinged to—the sliding shaft in the gear box. The only drawback there appears to be to this device is that it is impossible to push the car backwards—as, for instance, in the garage—unless the clutch is held out of engagement, for the pawl can only be drawn out from the ratchet wheel by introducing the reverse gear, and consequently the engine would prevent the car from being pushed, unless disconnected by the clutch.

Two foot brakes are, as usual, provided, in addition to the hand brake on the driving wheels. One of these is on the front end of the second-motion-shaft, and the other on the counter-shaft; both have hollow drums into which water is automatically admitted to cool them.

Kries Coquetting with Greenwood.

It develops that the deal whereby the Standard Engine and Automobile Works will locate at Greenwood, Ind., has not yet got beyond the talking stage. Joseph Kreis, representing the concern, was in Greenwood last week endeavoring to sell the eighty town lots offered as a bonus. Upon his success depends the success of the venture. Mr. Kries emphasizes the ability of those he represents to secure a bonus elsewhere in case Greenwood turns a deaf ear thereto, and local interests are asking for assurances that the plant will be operated if the proposed bonus is secured. Thus far the lots are not selling rapidly.

EFFECT OF SIDE ENTRANCES

Gives Designers Wider Scope for Their Talents and Purchasers More Latitude.

Until the appearance of the side entrance body nine out of ten cars carrying more than two passengers were of the tonneau type, in which the passengers sat facing partly forward and partly crosswise. This was not as comfortable a position as one facing entirely forward, as in a body of the surrey type, but this was considered to be compensated for by the greater passenger and luggage carrying capacity of the tonneau. This aside, however, there was little choice, for a rear entrance almost put a surrey arrangement of seats out of the question.

With the side entrance, however, the body designer or builder has his choice of the two types. The result is that surreys are distinctly gaining ground, without, however, pushing the tonneau into the background. The latter has, as stated, its advantages. If the outside body dimensions are sufficiently generous there is room, by carrying the seats forward on each side, to seat three or four persons without crowding, as well as to leave some room for luggage. With a surrey, however, only the width of the body can be utilized, and at the most there is room only for three passengers. But a surrey—or forward facing—seat is considerably more comfortable when a long ride is to be taken; both because there is more room for the legs and because there is no necessity for craning or twisting the neck to see in front.

So far, the result is that there is great diversity of opinion on the subject. Designers are no longer restricted to one model. They can take their choice of a variety of patterns, or even evolve a new type, as they did when they produced the now well known tonneau. It is by no means improbable that a composite body, incorporating the good points of both the tonneau and the surrey, will appear, in which case a warm welcome would almost certainly be accorded it.

Slusser Goes with Harrolds.

R. W. Slusser, who was in charge of the N. A. A. M. exhibit at the St. Louis Exposition, has been added to the staff of the Harrolds Motor Car Co., New York. Than Slusser few men have had more of that experience that should serve him to advantage in advancing the Harrolds line, Pierces and Oldsmobiles, in this vicinity.

Lake Shore to Adopt Motors?

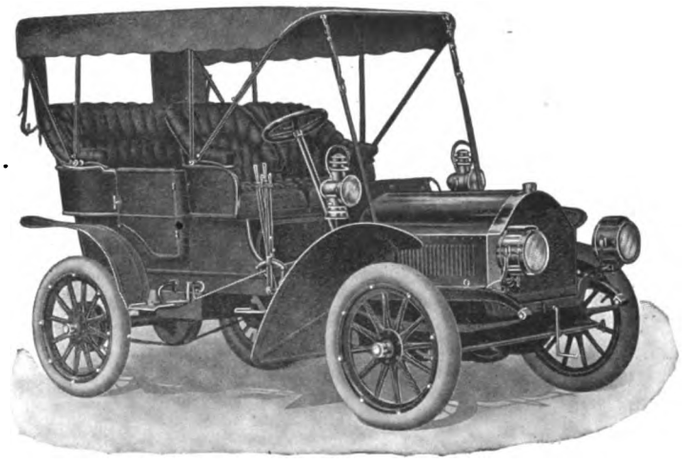
From Buffalo comes the interesting rumor that the Lake Shore Railroad has ordered 100 gasoline engines with which to equip cars to fight the interurban trolley lines in its territory.

A. R. Bangs, Boston, Mass., has added the agency for the Baker electrics to his accounts.

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Stevens's Four-Cylinder Car Appears.

As it was known to be in course of preparation, the submission of an entirely new and radically different Stevens-Duryea model will create little surprise in well informed trade circles. It is of the steadily wing family of side entrance cars, with a four cylinder vertical motor mounted in front under a hood. It is rated at 20 horsepower, weighs 1,650 pounds and lists at $2,500. As



THE 1905 STEVENS-DURYEA, $2500.

the illustration makes plain, the car is designed along good lines, and presents a distinctly pleasing appearance.

The pressed steel frame of channel section is carried on semi-elliptical springs, those in front being 40 inches long and the rear ones 44 inches. The front axle is tubular, 2 inches in diameter, and the rear one of 2¾ inch sections. These carry 30-inch artillery wheels, shod with 3½-inch heavy Fisk tires. The wheel base is 90 inches and the tread 56 inches.

The engine has, as stated, four vertical cylinders, cast separately, and with water jackets and heads integral with the cylinders. The cylinder dimensions are 3⅞x4½ inches, and the valves are on the same side, the inlet being mechanically operated.

The transmission device consists of sliding gears in conjunction with a propeller shaft and bevel gear drive to the live rear axle. Three speeds and a reverse are furnished, and the drive is direct on the high speed. The clutch is of the multiple disk type, with leather bearing on steel, affording a splendid grip. A single float feed carburetter is used, with an automatic compensating device.

Reversible wheel steering is used, with Elliott steering pivots. The motor and transmission shafts have bronze bearings, the front wheels conical roller, and the rear wheels and pinion shaft flexible roller bearings. There are two expanding brakes on rear hubs and one constricting brake at rear of gear case. The method of lubrication is by multiple sight feed—the gravity system.

A cellular cooler of the Mercedes type is fitted, the circulation being by centrifugal pump. Jump spark ignition, the current being supplied by dry cells. Both ignition and throttle are operated by hand.

Jeffery's Expanding Export Trade.

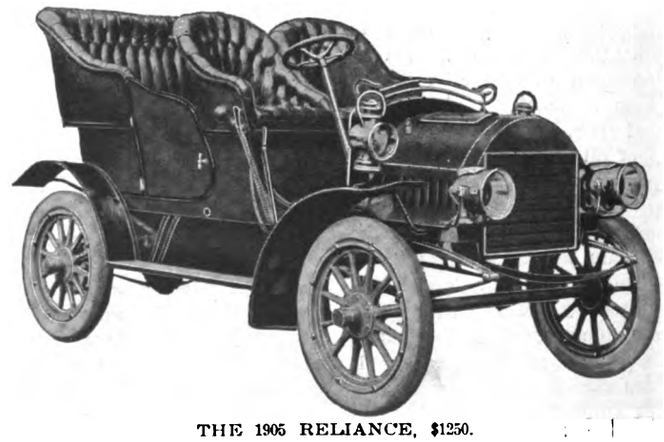
The progressive King of Siam will hereafter move about in an American automobile—a Rambler. Thos. B. Jeffery & Co. have already shipped the car—a 1905 model, with canopy top and every other appointment that fashion and regal ideas could conceive. It is expected to start the Siamese trade Rambler-wise. It is but one of approximately one hundred Ramblers that have been shipped to the Orient by Jeffery & Co. during the past season, due in part to the excellent work done by their representative who toured the Far East in 1903 on a Model E car. Indeed, during the last ten days shipments of Ramblers were made to New Zealand, Australia, South Africa, Siam, India and Italy.

Regarding the New Reliance.

The rejuvenated Reliance Automobile Mfg. Co., Detroit, Mich., which recently received an influx of new capital ample to place it on a sound and prosperous footing, is preparing to market a car that is expected to prove a tempting bait for buyers seeking exceptional value for their money. Ample facilities for its manufacture are possessed by the Reliance company, and it is preparing to turn out 1,000 of these cars for the 1905 trade. A sales organization commensurate with the producing end is being perfected, and it will undoubtedly prove equally effective.

The car, which is styled the Reliance, is of the popular side entrance type, similar to the original Reliance car, which, although it is not generally known, is claimed to have been the first car in this country to be built as a tonneau with side entrance. The power plant consists of a double cylinder opposed engine, rated at 16 horsepower, and possessing remarkable flexibility. A distinctive feature is the control system, the friction clutch and expansion brake being operated entirely by means of a single foot pedal, which is claimed to give the entire speed range of from two to forty miles an hour on the direct drive, affording free use of the hands and prolonging the life of gears indefinitely. Spark and throttle control is secured by means of ratchet levers mounted on the steering tube, the supply of fuel being regulated for uniform speeds in this way, with a foot accelerator for emergencies.

The wheel base is 92 inches, and the car weighs about 1,700 pounds. The price is $1,250.



THE 1905 RELIANCE, $1250.

How Imports Have Increased.

Just over 500 is the record of foreign cars imported into this country during 1904, making almost double the number entered during 1903. The value of these 500-odd cars is placed by Appraiser Whitehead of the Port of New York at, approximately $1,700,000.

How great the increase is may be seen from a comparison with the previous year, when the automobile imports at New York were 253 machines, which the appraiser found to have a total value of $800,000.

Harvey T. Andrews, Assistant Appraiser of the Ninth Division of Appraiser Whitehead's office, who is charged with the immediate examination and appraisal of automobiles, said that naturally the appraised values of the automobiles as returned to Collector Stranahan give an inadequate idea of the price paid to agents on this side by the public. To the appraised values as returned by the customs officers are added the customs duties, agents' commissions, freight charges and other expenses, so that by the time the automobiles are turned over to individual buyers the selling prices far exceed the values put upon the machines by the Custom House.

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ACME'S 1905 LINE

Pennsylvania Concern's Attractive Productions Bear Signs of a Strong, Improving Hand.

Among the concerns that will this year market a side entrance car of approved modern design, with a four cylinder vertical engine, is the Acme Motor Car Co., Reading, Pa. This car, which is styled the Acme Type 8, is, as the accompanying illustration makes plain, of handsome appearance, and quite bears out the claims put forth in its behalf by the Pennsylvania concern during the past few months. It will be the company's leading model. In addition, there will be marketed two double cylinder cars—a tonneau and a touring runabout—and a single cylinder runabout.

The Acme Type 8 is rated at 30 H. P. and priced at $2,750, with folding Cape Carte top and full equipment. Type 6 is a 16 H. P., rear entrance tonneau car, listing at $1,650; Type 10 is termed a touring runabout, having seating capacity for two passengers regularly, with a dos-a-dos attachment, developing 16 H. P. and costing $1,000; while Type 9, at $800, is the lowest priced model. It is a runabout and is rated at 9 H. P.

The chassis of Type 8 consists of a pressed steel frame, mounted on semi-elliptic springs front and rear, the former being 42 inches long and having 7 leaves, and the latter 48 inches with 9 leaves. This chassis is imposed on 34-inch artillery wheels, having 12 spokes each and shod with 4-inch tires of any standard American make. The wheels are set well apart, the base being 102½ inches. The tread is 56 inches, and there is 10 inches clearance between the ground and the lowest part of the mechanism. The front axle is tubular, 2 inches in diameter, and the solid rear axle is made of 1½ inches square nickel steel.

The car is driven by a four-cylinder vertical engine, mounted in front under a bonnet. The cylinders are cast separately, the water jackets and cylinder heads being integral with the cylinders. The latter have a bore of 4 inches and a stroke of 5 inches. The engine speed ranges between 200 and 2400 R. P. M., the rated power, 30-Horse, being developed at a normal speed of 1000 R. P. M. The valves are located on the same side, the inlet—which is automatic—being immediately above the exhaust.

The transmission is of the well known sliding gear type, with double chains to the rear wheels. Four speeds forward and a reverse are provided, the drive being direct on the high gear. The transmission bearings run on balls, while rollers are used for the wheels and jack shaft, and plain bronze for the engine bearings. Two compensating band brakes are fitted to the rear wheels and a similar number on the jack shaft back of the differential. Steering is by wheel, irreversible, with quadruple screw and nut. A governor is fitted on the throttle, which is also controlled by a lever; a hand lever controls the ignition.

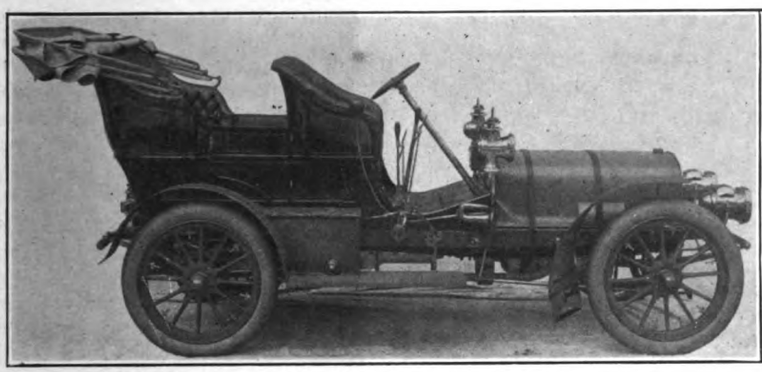
Ignition is by jump spark, with coil and high tension magnet; current is provided by high tension magnets and storage batteries.

A float feed carburetter is employed, automatically compensating and governing. The clutch is of the conical type, the surfaces being leather against cast iron. The clutch is self centering and self contained, and there is no end thrust on the bearings.

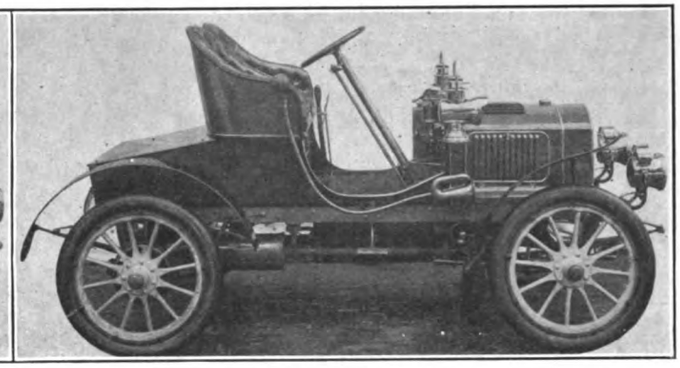
The body is of the double side entrance tonneau type, seating five to seven passengers; the front seats are of the popular divided type. The car weighs 2,300 lbs.

Types 6 and 10 have many points of similarity, both being driven by a two cylinder vertical engine having cylinder dimensions of 4x5 inches and developing 16 H. P., at a normal speed of 1000 R. P. M. The same general design employed in the four cylinder engine has been adopted in the case of the one in question. The frames, however, are of armored wood, with platform springs, on the Type 6, and semi and full elliptical springs on the Type 10. The wheels of the former are 32 inches, with 3½ inches, and the wheel base 84 inches; while the latter has 28 inch wheels, 3 inch tires and 79 inches wheel base. Both cars have three speeds and reverse, the Type 10 having sliding gears and double chains and Type 6 sliding gears and bevel gear drive.

A single cylinder engine drives the Type 9, the dimensions being 4⅛x5 inches, developing 9 H. P. The transmission is identical with that of Type 10, as are the frame, wheels, wheel base and other important details. The seats are divided, with sloping back; a dos-a-dos is also fitted.



ACME, TYPE 8, $2750.



ACME, TYPE 10, $1000.



ACME OPERA 'BUS, $2000.

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Morris Names His Committees.

Standing committees to serve during the ensuing year have been appointed by President Dave H. Morris, of the Automobile Club of America, as follows:

House Committee—Capt. Homer W. Hedge, chairman; Gen. George Moore Smith, Robert Walton Goelet, W. H. Browning and J. V. Black.

Law Committee—Winthrop E. Scarritt, chairman; W. W. Niles and another to be chosen.

Committee on Membership — Emerson Brooks, chairman; Clifford V. Brokaw and John V. Trevor.

Racing Committee—George I. Scott, chairman; William K. Vanderbilt, Jr., and D. H. Morris.

Library Committee—A. R. Shattuck, chairman, and Philip T. Dodge.

Good Roads Committee—A. R. Shattuck, chairman; William Rockefeller, J. F. Plummer, Jr., and M. D. Chapman.

Runs and Tours Committee—M. M. Belding, Jr., chairman.

Foreign Relations Committee—Chauncey Gray Dinsmore, chairman.

Exhibition Committee—Gen. George Moore Smith, chairman.

Motor Boat Committee—J. H. Carpenter, chairman; Frank Croker, P. Chauncey Anderson and C. V. Brokaw.

Technical Committee—Dr. Schuyler Skaats Wheeler, chairman.

Chicago Thief Confesses.

Time was when automobiles were safe from theft, both because of the knowledge required to operate them and by reason of the fact that, if stolen, they would be difficult to dispose of. Both obstacles have been overcome, however. Whether chauffeurs have turned thieves or thieves learned the art of chauffeuring is still not clear; but it makes no particular difference which it is, as long as automobiles are stolen. The latest development is that dealers are to be found who will buy stolen cars. A Chicago thief who was run to earth last week confessed that he had disposed of one of the cars he had stolen to a Wisconsin dealer. The latter must have been either extremely credulous or downright dishonest to have purchased the car from an utter stranger.

Another Tall Tale from Paris.

Parisian motorists who wish to earn a few dollars "on the side" have hit upon a new scheme, and as a result automobiles plying for hire are appearing on the streets of Paris in a new guise. A certain number of them daily take their stand like ordinary fiacres, and any one who is desirous of going out for a day, half day or even an hour's automobile run can engage their services. They are generally driven by experienced chauffeurs, who appear usually to be the owners of the vehicles as well as their drivers, and it is stated that their politeness to customers forms an agreeable contrast to the offensive demeanor which is a characteristic of the Paris cabby.

Germany's Two Open Contests.

The International Herkomer touring competition, so-called because it was originated by and its most valuable prize donated by Hubert von Herkomer, the famous Bavarian painter, which was to have taken place last summer, will be conducted in August next. The conditions and minor details of the contest have just been given out.

The Herkomer competition is open to members of any automobile club whose names are sent in by the secretaries of the clubs, accompanied with the entrance fee of $60, to the secretary of the German Automobile Club before May 31, 1905. The Herkomer competition will occupy six days, as follows:

First day—Exhibition in Munich of all vehicles entered, to be judged upon as to beauty and practical use of coach work.

Second day—Hill climbing contest on the Kesselberg, four and one-half miles.

Third day—Speed trials on level stretch in Forstenrieder Park, near Munich, three and three-fifths miles.

Fourth, fifth and sixth days—Touring reliability trial over this route: Munich, Bruck, Ausburg, Ulm, Tübingen, Baden-Baden, Stuttgart, Nuremburg, Regensburg and back to Munich. An observer will be placed on each car during the touring trial to note the number of involuntary stops, their cause and length of time. Reliability and not speed will count.

The prizes offered are numerous and valuable. The Herkomer trophy, valued at $2,000, must be won twice within three years to become the property of any competitor. The second and third competitions are to take place in the country of the previous winner, under the management of the club to which the competitor belongs. The winner in the Herkomer competition will also receive an honorary prize, a work of art valued at $400. The winner in each years contest will have his portrait painted by Hubert von Herkomer. A silver trophy, valued at $200 will be given for the best average speed in hill climbing and running on flat. Another silver prize, worth $200 will be given for the handsomest and most practical coach work.

The Bleichroeder international race will start immediately after the Herkomer competition, and will last two days. The race is open to all racing machines weighing up to 2,204 pounds, and in case of magneto ignition, up to 2,222 pounds. The entries close June 30, 1905, and the fee is $60. A hill climb up Kesselberg will be the first day's attraction, and on the following day a three and three-fifths mile run in Forstendrieder Park. The best average time will decide the event. A first prize of $1,600 cash and a second prize of $400 cash is offered.

The present coaches in Denmark are to be replaced by automobiles. This is the result of the activity on the part of the Automobile Club of Denmark, which for some time past has been endeavoring to persuade the authorities to relinquish the primitive vehicles and replace them by automobile 'buses.

For Use in the Gold Fields.

The four cylinder Columbia which L. L. Patrick recently purchased in San Francisco to carry passengers between Tonopah and Goldfield, Nev., made the trip overland from the Golden Gate without any mishap except a broken spring owing to bad bridges near Sacramento. It reached Reno, Nev., one of the most difficult trips in the West, in four days, though some of the roads were in very bad condition. There are no roads to speak of in the vicinity of Tonopah, and operators are compelled to use a compass to guide them. The distance between Tonopah and Goldfield is about thirty miles, and a Winton Quad, which has been carrying passengers between the two places, is giving excellent service over the rough mountain roads.

Want the Golden Gate Opened.

Some of the roads in Golden Gate Park, San Francisco, are closed to automobiles, and an effort is to be made by the San Francisco Chauffeurs Association to have them opened. A committee has been appointed, consisting of President T. P. Jarvis, Robert Turner, F. W. Hoadley and A. J. Cleary, to send a letter to the Park Commissioners asking for more liberty. The letter will be followed by a petition bearing the signatures of motorists and of many horsemen and owners of private conveyances who do not object to automobiles. Both the letter and the petition will contain a clause from the rules of the association calling attention to the fact that members violating any ordinance will be expelled.

Why the Mayor is Wroth.

Mayor Jeffrey of Columbus, Ohio, will recommend to the Council of his city that an amendment be added to the local law regulating automobiles prohibiting any one but the owner of a car from taking out a license. He recently had a narrow escape from being run over by a scorching motorist who was driving a car which he did not own and which bore a license tag which had been secured by still another person. The Mayor is also in favor of enforcing that part of the present regulation which requires motorists to use lamps at night which throw a light on their license tags.

For the Exploration of Sahara.

Further exploration of the Desert of Sahara in automobiles is likely to take place. M. Pierre de Marglaida, a member of the Algerian Automobile Club, has given a challenge cup for the automobilist who penetrates farthest into the Sahara each year. The cup will become the possession of the holder after being won thrice. The conditions will be fixed by the Algerian club.

Suit Based on Inferior Gasolene.

Dr. Wilbur S. Conkling, of Des Moines, is a gentleman of large faith. He has commenced an action in the district court asking for $1,000 from the Standard Oil Company for the burning of his automobile, claiming that an inferior grade of gasoline was sold to him.

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ROAD RIGHTS IRREVOCABLE

Counsellor Terry Digs Deep into Legal Authorities and Quotes Them to Advantage.

In the opinion of Charles Thaddeus Terry, counsel to the National Association of Automobile Manufacturers, the order issued a short time ago by the County Court of Grant County, W. Va., excluding automobiles from the highways, is clearly unconstitutional. This contention is upheld by Mr. Terry in an elaborate opinion, fortified by citations from decisions in that and other States, which he has prepared at the request of the N. A. A. M. To a Motor World man on Wednesday Mr. Terry stated that he believed that it would be an easy matter for any motorist in Grant County to have the order revoked by instituting legal proceedings with that end in view.

The order in question was issued on October 5 last, and was widely commented on at the time. The full text of the order is as follows:

"At the County Court held for the County of Grant, at the courthouse thereof, on the 5th day of October, 1904, the following order was made and entered:

" 'It appearing to the court that by reason of the running of automobiles upon the highways of Grant County, injury to both the person and property of some of its citizens has been sustained;

" 'And it further appearing to the court that the public sentiment of the people of the county is against the running and operation of such machines in this county, it is thereupon ordered that all persons be and are hereby prohibited from running and operating automobiles, or machines of like character, upon any of the highways of this county, and the several superintendents and surveyors of roads of the county are directed to strictly enforce this order. Any one violating the provisions of this order will be subject to a penalty of $100.' "

It appears that David L. Luke, a motorist resident in Grant County, approached the N. A. A. M. on the subject of the validity of the order. The executive committee of the association gave the matter attention at its last meeting, and directed Mr. Terry to prepare an opinion on the validity of the order for the benefit of Mr. Luke and any other persons interested. This Mr. Terry did, and the result is the opinion referred to, which is lengthy and deals with the subject in an exhaustive and able manner.

"This order absolutely forbids and prohibits to automobilists the use of the public highways in Grant County, and would be comic in its absurdity were the results of its enforcement not so pernicious," he says. "However, the logic and propositions of law necessary to determine that so despotic a mandate cannot long stand are not far to seek. The very purpose of the framers of the United States Constitution, as stated in the preamble thereto—namely, to secure the blessings of liberty to ourselves and our posterity—would be far from accomplished if such an order could be permanently enforced. It is so much in contravention of the very spirit of liberty dominant in the United States that any American schoolboy should, without hesitancy, declare it void. When we seek to give the grounds for the unconstitutionality of this order our difficulty comes not in finding reasons, but in attempting to make any orderly arrangement of our reasons. They may, however, all be comprehended under the following general heads:

"First—It is an illegal usurpation of the powers of the legislature by the judiciary.

"Second—It is in violation of the Fifth and Fourteenth amendments of the United States Constitution and in violation of Article II, Section 6, of the West Virginia constitution, in so far as it deprives citizens of both liberty and property without due process of law.

"Third—It is an excess of the police power of the State, and a deprivation of both liberty and property without due process of law.

"Fourth—The order discriminates between users of the highways and deprives automobilists of the equal protection of the law, and is therefore unconstitutional and void."

In regular order Mr. Terry then proceeds to marshal his facts in support of these contentions. Referring to the first, he traces the functions of two of the three branches of this country's government, viz., the legislative and the judicial. The function of the latter, he says, is to interpret and construe the laws made by the legislature. The province and duty of judges is to determine what the law is upon existing facts, while that of the legislature is to make laws. He cites decisions, some of them from West Virginia, to support his claim that courts have no power to make laws, and that even legislatures have no right to delegate their power to courts. He quotes from the constitution of West Virginia to the effect that the three branches shall be "separate and distinct so that neither shall exercise the powers properly belonging to either of the others." This condition of affairs must continue to exist until the constitution itself is changed, he says.

The second contention is next taken up, viz., that the order is a violation of both the United States and the West Virginia constitutions.

"The constitution of the State of West Virginia, Article II, Section 6," he says, "provides:

" 'No person in time of peace shall be deprived of life, liberty or property without due process of law.'

"The Fourteenth Amendment of the United States Constitution contains a similar provision, together with the guaranty that no State 'shall deny to any person within its jurisdiction the equal protection of the laws.' It is not necessary that a man's property be physically taken from him before it can be said that he has been deprived of his property, nor that he be imprisoned before it can be said that he has been deprived of liberty. The proposition that a citizen is deprived of both liberty and property by restriction of his right to use his property as he may see fit is one that cannot be doubted. Likewise deprivation of a party of any of the rights which are possessed by persons generally is the depriving of his liberty within the meaning of the Constitution.

"The general law on this subject is well stated in 10 A. M. & Eng. Ency. of Law, 2d Ed., 209-299, as follows:

" 'It is also considered that any person may be deprived of his property without any physical taking thereof, and the Constitution is violated by any law which destroys the value of the property, takes away any of its essential attributes or deprives the owner of the lawful use of it.'

"An extended examination of the authorities discloses that this view is sustained in the cases generally.

"In the matter of Jacobs, reported in 98 N. Y., 96, Judge Earle says:

" 'The constitutional guaranty that no person can be deprived of his property without due process of law may be violated without the physical taking of property for public or private use. Property may be destroyed or its value may be annihilated. It is owned and kept for some useful purpose, and it has no value unless it can be used. Its capability for enjoyment and adaptability to some use are essential characteristics and attributes without which property cannot be conceived; and hence any law which destroys it or its value or takes away any of its essential attributes deprives the owner of his property.

" 'The constitutional guaranty would be of little worth if the legislature could, without compensation, destroy property or its value, deprive the owner of its use, deny him the right to live in his own house or to work at any lawful trade therein.

" 'So, too, one may be deprived of his liberty and his constitutional right thereto violated without the actual imprisonment or restraint of his person. Liberty, in its broad sense, as understood in this country, means the right not only of freedom from actual servitude, imprisonment or restraint, but the right of one to use his faculties in all lawful ways, to live and work where he will, to earn his livelihood in any lawful calling, and to pursue any lawful trade or vocation. All laws, therefore, which impair or trammel these rights, which limit one in his choice of a trade or profession, or confine him to work or live in the specified locality or exclude him from his own house or restrain his otherwise lawful movements, are infringements upon his fundamental rights of liberty, which are under constitutional protection.' "

The third contention is then taken up, viz., that the order is in excess of the police power and a deprivation of liberty and property without due process of law.

"Any legislation to be warranted by the police power must be exercised for the benefit of all classes of the public, and must not

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work an oppression upon any one class," he says. "The moment the legislature passes the limits required by the necessities of the public, regarding the use of the particular thing regulated, then the constitutional provisions regulating the deprivation of property or liberty are violated, since such restrictions cannot be deemed to constitute due process of law. It hardly requires any argument to show the order under consideration is both unreasonable and beyond the limits required for the protection of public safety. The extreme unreasonableness of the law may be seen when we consider the damage that might result from the prohibition of his right to operate an automobile."

"The rule as to the exercise of police powers is clearly set forth by the United States Supreme Court.

"In the case of Lawton vs. Steele, 152 U. S., 38 L. Ed., 385:

"'To justify the State in thus interposing its authority in behalf of the public it must appear, first, that the interests of the public generally, as distinguished from those of a particular class, require such interference, and, second, that the means are reasonably necessary for the accomplishment of the purpose and not unduly oppressive upon individuals. The legislature may not, under the guise of protecting the public interests, arbitrarily interfere with private business or impose unusual and unnecessary restrictions upon lawful occupations. In other words, its determination as to what is a proper exercise of its police powers is not final or conclusive, but is subject to the supervision of the courts.'

"This case has been generally quoted and approved by the State courts. In the New York case of Colon vs. Lish, 153 N. Y., 188, the court says:

"'The legislature is not vested with the power to arbitrarily provide that any procedure it may choose to declare such shall be regarded as due process of law. If it possessed that power the guaranty of the Constitution would be rendered unavailing and private rights of citizens would be within its absolute control.'

"Similarly in the case of the matter of Jacobs, previously quoted, we find the following:

"'Under the mere guise of police regulations personal rights and private property cannot be arbitrarily invaded, and the determination of the legislature is not final or conclusive.'"

Finally, Mr. Terry supports his fourth and last contention, that the order is void as discriminating between users of the highways, and its corollary that this deprives automobilists as a class of the equal protection of the laws. He ascribes the order to an "insane and jealous prejudice" against automobilists. He contrasts the danger from a horse and an automobile, to the favor of the latter, saying that accidents from its use result only from careless or reckless handling. The famous case of Mason vs. West, 61 App. Div., 40, is referred to, in which it was held "that the use of the streets must be extended to meet the modern innovation of rapid locomotion," and that it is not meant "that an automobile or any other modern means of conveyance is an unlawful or improper user."

Proceeding along this line, Mr. Terry says that it is too late to question the fact that the automobile has come to stay. He declares that the time is now almost passed when automobilists are regarded as criminals. Highways have always been considered public property, and each citizen may use them in such lawful manner as he sees fit, provided he does not interfere with similar rights of others.

The provisions of the order in question should in reason apply to all vehicles alike, says Mr. Terry. If it does not it is void. He cites decisions in support of this, one of them, in the case of Walston vs. Nevin, 28 U. S., 578, as follows: "Unless the law operates alike on all persons and property similarly situated, equal protection is denied and such legislation is unconstitutional."

Crossed Desert and Mountain Range.

Covering 110 miles over mountain roads, across numerous streams and part of the Mojave Desert, and climbing from sea level to an elevation of 7,000 feet in 7 hours and 25 minutes actual running time is one of the latest achievements to the credit of an automobile. This trip was made recently from Los Angeles, Cal., to the Big Horn mine, at the summit of the San Gabriel Range, by F. C. Fenner, a mining engineer of Los Angeles. The journey was made in a White steamer, which was driven by H. D. Ryus, of Los Angeles. They encountered a rise of 800 feet in the last mile and a half.

The entire time consumed by the journey was 9 hours and 5 minutes, of which 1 hour and 40 minutes were used for dinner and other stops. On the return trip, the next day, the car travelled the last seventy miles into Los Angeles in 4 hours and 45 minutes. In addition to its passengers, $2,500 in pure gold was carried—and over a "hobo" infested route, too.

Mr. Fenner is general manager of the Lowell & California Mining Co., and is required to make frequent journeys to the Big Horn mine. He was so pleased by the performance of the car that he bought it from the White agency on his return to Los Angeles.

Farson Resigns the Presidency.

Chicago clubmen are mourning the resignation of President John Farson, which was presented last week. Nominally the resignation does not take effect until March 1. By agreement, however, the actual duties of the presidency fell upon Vice-President Ira M. Cobe on January 1.

"My business compels me to be in New York so much of my time," Mr. Farson is quoted as saying, "that I have felt it justice to the club to resign. There is the most harmonious feeling in the club."

It was only about a couple of months ago that John Farson was unanimously re-elected president of the Chicago Automobile Club. He has long been the leading spirit in the opposition to the numbering and licensing schemes of the Chicago authorities, and again and again has thwarted them in their efforts to enforce them. His cleverly planned and executed injunction coups have attracted wide attention, and he has held his club to a pretty consistent stand of opposition in spite of some disposition to vacillate.

U. P. to Use Railroad Automobiles.

Dispatches from Omaha, Neb., state that the Union Pacific Railroad at last has adopted a type of gasolene motors to use on its branch lines in Nebraska and Kansas. This month will see a number of them installed, it is said, and soon all the smaller branches of the company will be equipped with this type of motive power, to the exclusion of the locomotive.

In general appearance the new car is about the size of an ordinary railroad coach, one end being fitted up for passengers and the other end as a baggage and freight car. The motor is between the two. It is expected that the car will develop sixty miles an hour, and its use will enable the company to give more frequent service on its branch lines. Only a motorman and conductor are necessary to run this car, and the company will save the expense of train crews.

Seven Nations File Entries.

Seven different countries have qualified for competition in the Bennett Cup race by depositing $600 each with the Automobile Club of France and making formal entry of a team. The list closed on Saturday, December 31, as under the rules governing the contest entries must be in the hands of the cup holding club by the end of the year. The seven countries entered are Germany, Great Britain, Austria, the United States, Italy, Switzerland and France, the latter being now in possession of the cup.

The Green Dragon a Trotting Horse!

The practice of applying fanciful titles to racing cars has its drawbacks. Thus the Panama Star and Herald prints an alleged cable dispatch from Fresno, Cal., gravely stating that "the world's trotting record had been broken by the American horse 'Peerless Green Dragon,' driven by Barney Oldfield." Not even the fact that the time given was for fifty miles, in 48:39 1-5, shed light on the Panama publication.

Woe of Panama's Lone Motorist.

There is just one automobile in Panama, and its owner, D. Carl Henry, is not wholly happy. "The available gasolene has given out," he writes the Motor World, "and I am awaiting the arrival of a fresh supply from the States before I can use my car."

A movement is on foot among French motorists to establish a "Ligue des Chauffeurs." It will be formed along the lines of the Motor Union in Great Britain.

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ABOUT BALL BEARINGS

Signs of Increasing Favor Apparent—Souther Answers Some of the Objections to Them.

Ball bearings are slowly and surely creeping into favor again. There was a time when they had received some very black eyes, and were apparently sidetracked forever. Gradually some of the lighter machines adopted them on the wheels or elsewhere, and they gave satisfaction. Naturally, manufacturers of a medium sized machine began to use them, and were successful by simply increasing the diameter of the balls used.

Six or seven years ago the writer broached the question of ball bearings to one of his clients and was laughed at, saying they were absolute failures for heavyweights. I took the ground then that if the size of the ball was suitably proportioned to the weight it must carry they would be successful. It is logical and natural to believe that if a small ball will carry a small load, a large ball will carry a larger load.

Such has proved to be the case, and I now firmly believe that, with a perfectly designed bearing, there is no service to which a ball bearing may not be applied successfully, as far as the wear of the bearing is concerned.

The only obstacle met with is the difficulty of making large bearings cheaply and as accurate as they must be. It is difficult to get a large cup, perfectly symmetrical, and keep it so during hardening and tempering operations.

The design of the bearing is much more important than the quality of the material entering into the balls and races. It is quite possible to design a bearing which will crush or otherwise destroy any balls or cones that go into its make-up. Bearings have been seen by the writer so constructed that when the load came upon the ball, the tendency was to thrust it, not normally or nearly so, against a bearing surface, but toward a wedge-shaped opening, the ball acting as the wedge and tending to spread apart the elements of the bearing or be crushed. No ball or material can stand under these circumstances.

Another idea that has led many designers into trouble is that the ball must have point contact only and run upon a line, the smaller the better. This idea is most fatal to a ball bearing. The moment a little pressure is brought to bear upon a ball, it bears upon a surface by compressing the metal, instead of upon a point. As it rolls along it deforms the surface of the metal repeatedly in finding a suitable area upon which to support its load. After this deformation has gone on for a little while, the steel begins to disintegrate, if it is hard, or spread out if it is soft. The bearing goes to pieces very rapidly under these conditions. The obvious and only way to avoid such behavior and to get the very best out of a ball bearing is to give it what it will take, and it must have a suitable surface to run upon while carrying a heavy load.

The experience of the writer has shown that this solution is entirely possible for all ball bearing construction, and that there will be no deterioration of ball or cone or cup when so constructed.

The radius of the cup and cone should be made to conform to the radius of the ball as nearly as is commercially practical.

Objections will be raised that this will increase the friction of the ball bearing to a very great extent. In answer to this objection the writer can state that careful tests made under very heavy loads have positively demonstrated that the friction between the ball bearing in which the radius of the ball conforms closely to that of its bearing surface and one where a ball bears on a point only is immeasurable; in fact, the friction of the ball bearing may be practically disregarded as an element in the construction of an automobile. When compared with the friction of the tire rolling on the ground, it is nothing.

HENRY SOUTHER.

Why New Bids were Called for.

Bids for "one or more" automobiles were recently advertised for by the San Francisco Fire Commission, but no cars have yet been purchased. There is quite an interesting story behind the delay in purchasing the machines, which were to take the place of buggies for the use of the chiefs of the department. When the various dealers read the specifications upon which to base their bids they were amazed to find that but one firm had any chance to get the contract, as the specifications were so worded that the Autocar was the only machine that fitted the description. The dealers selling other cars made such a strong protest that the bids were rejected and a more flexible set of specifications were ordered drawn up that would give all machines a chance in the competition. It is said that in the original specifications even the width of the seat was specified as 38 inches, which is the width of the Autocar seat.

For Quick Seasoning of Wood.

A new method for seasoning timber has been adopted by several European automobile works. The advantages claimed are tha the process seasons newly felled timber within a few days, increases its strength, toughness, durability and resiliency. It reduces also the porousness, thereby diminishing its tendency to shrink, expand, or warp, and split, and it prevents dry rot and the penetration of wood-destroying germs. As it improves the appearance of many kinds of woods, it is particularly suitable for decorative purposes. The process is both novel and simple, every fibre becomes thoroughly impregnated, and owing to the reduction of the porousness of the wood it gives a much finer polish. The cost of the whole process, which is applicable to every kind of timber, compares most favorably with that of other methods of preserving and seasoning timber.

WOODBURY, HIS REASONS

Why He Chose Foreign Cars for City Use Imagines They Give no Trouble.

In asking a week or two ago for an appropriation of $5,000, with which to buy two automobiles for use in his department, Commissioner John M. Woodbury of New York's Department of Street Cleaning stated that he proposed to purchase foreign cars with this money. He was quoted as saying that the latter at $2,500 apiece were vastly better than domestic cars at $1,800.

With the purpose of "drawing out" Major Woodbury and ascertaining why he considered foreign cars superior, a Motor World man sought and found the Commissioner at his office in the Park Row Building on Wednesday morning. In spite of his being a tremendously busy man, working under double or triple pressure in consequence of the ten-inch fall of snow the night before, Major Woodbury gave generously of his time in discussing the subject, and showed himself to be keenly interested and possessed of a splendid grip of the essentials of the matter.

"Yes, I got the money, and now have the cars in service," he said in reply to the first question. "They cost me $2,500 apiece; one is of French, the other of Italian manufacture; both were second handed, but neither had been driven more than a few hundred miles."

"You prefer foreign cars and consider them superior to the American product?"

"Yes."

"May I ask why?"

"Because they are," the major replied with a snap of his jaws and an emphatic nod of his head.

"But again, why?"

"Because they are; because they run—run all the time, everywhere and under all conditions.

"Now, look here: We have more than one thousand miles of streets to look after. We must inspect these—not slowly and at our leisure, but in a hurry and at all times. No horse can do the work we have to do. Therefore we use automobiles. We have a number of them—not foreign ones only, but several domestic ones—and shall want many more. Where we shall get them is a question of absorbing interest. We load these automobiles up with four or five men and send them all over town, over rough streets as well as smooth ones. We stop suddenly and we start suddenly, and that is where most of the domestic automobiles fail. They won't stand the racket."

These remarks were hurled at the Motor World man in disjointed sentences and amid many interruptions. Clerks ran in and out of the office, delivered messages and received orders, the telephone rang about every other minute, and documents for Major Woodbury's signature were thrust under his hands whenever the latter were not otherwise employed.

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Two sheepish looking teamsters were brought in and summarily discharged by the Commissioner himself, after a short and heated dialogue, they having been caught red handed in the act of dumping snow taken from the streets into manholes. In the midst of this episode the Motor World man made a move to withdraw, but Major Woodbury stopped him with voice and extended arm.

"Come back here," he cried. "I want to talk to you. Tell me why we can't make as good automobiles as they do abroad?"

He was assured that we could and did, and half a dozen names were mentioned of cars in the foremost rank. In return Major Woodbury was asked if his poor opinion of domestic cars was based on actual experience with them.

"Of course it is," he replied. "Don't you suppose every dealer in town has been to see me and get me to try his car? Of course they have, and a nice time I have had with them."

"Well, what happened? Give me some specific cases."

"I'll give you plenty of them," was the quick reply. "To begin with, there was the Franklin (an air cooled car); we hadn't got half a mile with it before it heated and stopped dead, and we had to abandon it. Then there was the Knox; it did get us to Brooklyn, and there it broke down. What happened to it? Why, it broke down."

"But there must have been some particular part that gave way. It couldn't have been like the One Hoss Shay and gone to pieces all at once," it was suggested.

"Oh, I suppose not, but I don't know. I never heard what ailed it. Next there was the Winton. Its transmission gear went all to pieces and it stopped.

"What caused it?"

"Well, we found that a piece of wire that was in the street flew up and got caught in some part of the gear and caused the damage."

"But wouldn't the same thing have happened to your French car or any other?" was asked.

"Oh, no; it wouldn't have hurt it," was the confident reply.

"But why?" the Motor World man persisted. "If that wire had got caught in the sliding gears of the French car I am sure it would have stripped or broken them; such things have been known to happen, even to French cars."

"Well, if it had it would have been an act of God," was the naive reply.

"There's the Pope-Toledo," he went on. "We tried it and it did well; we thought it would prove all right, but then it broke a rear axle in a rut, and, of course, that ended it. A Ford did pretty well, too, but something, I don't remember what, happened to it."

"There was the Premier we tried last year," remarked an official who had been an interested listener to the conversation. "It ran all right, but we broke a steering knuckle one time and an axle another. But we did have a pretty heavy load on it," he added.

"What do you think of the Searchmont? Is that a good car?" asked another official.

"It isn't made now, but the last cars they turned out all right; they were learning to make a pretty good car."

"Well, that Searchmont is the best domestic car we have in the service," was the reply. "It runs all the time, the same as the French car."

"There is the Locomobile," said Major Woodbury, coming into the conversation again after declaring that one American car was "putrid," so bad was it. "We tried one of them; it was the very latest 'agony,' I believe, and it did very well indeed. I have no complaint to make of it."

"Why didn't you buy a Locomobile then?" he was asked.

"Because I didn't have $6,000 to spend for one. I got two second hand cars for $5,000."

"But why not buy a second hand Locomobile?"

"Didn't know anything about the old patterns, while I did know the French car. I could not afford to experiment."

When told that the 1905 Locomobiles were but little changed from the 1904 pattern Major Woodbury remained unconvinced or indifferent. The foreign cars ran and the domestic ones did not; that was the way he put it. No amount of questioning availed to bring out instances of structural weakness or to show that any account had been kept of the behavior of cars left with the department for trial purposes. Whenever any mishap occurred that was, apparently, regarded as final; the car was put aside and another one put through its paces. No one could listen to Major Woodbury and believe aught but that he was sincere in his denunciation of American cars, or that he would rejoice to find cars equal to the second hand foreign ones that he spoke of. But it was equally plain that unfortunate experiences with some domestic cars—some of them extending some distance back—had disposed him to view them with strong suspicion.

"Don't suppose for an instant that I think all French cars are good ones," he said. "On the contrary, there are many bad ones. But the good ones are good all through, and they are built strong and heavy and will, therefore, stand the rough usage we subject them to. When we can get domestic cars equally cheap and good we shall do so. And I hope that day will soon come.

"Now, don't you go to work and write up a flaring interview with me. If you do I shan't let you see me again," he said as the Motor World man started to leave; but there was a twinkle in his eye that robbed the inhibition of much of its force.

Fire Department Closes Another Garage.

"When garages jeopardize human lives their licenses to store gasolene must be taken away from them. We cannot afford to run any risks at all in such cases," is the way George E. Murray, superintendent of the Bureau of Combustibles, explains the attitude of the New York Fire Department on the garage question. Tadini F. Gerome, whose place of business is at No. 71 South Washington Square, is the latest garage owner to fall under the ban, his license having been revoked on Friday last by Fire Commissioner Hayes.

The revocation, which is the second within a few weeks, is the result of a rigid investigation into the conditions surrounding garages in the city. The first garage to lose its license was that of the Michelin Tire Co., which was told of in a recent number of the Motor World. In the rooms above the Tadini garage forty people are employed and several families live there, while three hundred people are employed in a factory at the rear of the place. The place was heated by two large stoves, which Mr. Murray recently told the Motor World would not be allowed in garages, and the storage tank was inclosed in a wooden partition, while the regulations state that partitions must be of brick or stone.

Fierce Fire Did Not Touch Gasolene.

The long expected report telling the result of the investigation into the cause of the fire in the Standard Automobile Co.'s garage, in West Thirty-ninth street, was filed with Fire Commissioner Hayes last Friday by Fire Marshal Peter Seery. The investigation was made by Assistant Fire Marshal John P. Prial, who agrees with the opinion expressed by the Motor World regarding the probable cause of the fire in the following words:

"In my opinion, the fire was caused by gasolene vapor entering the lower door of the furnace, which was frequently open, and igniting. The weather was cool and doors and windows were kept closed, so that vapor had a chance to accumulate."

One remarkable feature of the fire which was brought out by the investigation was that the storage tank under the floor was not damaged at all. On the contrary, it had preserved its contents intact. To again quote Mr. Prial:

"Gasolene tank was intact, and after a test the tank showed that it contained considerable gasolene. In fact, occupant claims that it had lost none during fire. In some cases gasolene tanks on cars that were in the very heart of the fire were intact, only a few having exploded. Those that were intact had contained gasolene previous to the fire, but it appears that gasolene vaporized during the progress of the fire, as at present they contain little or none."

Gives Cup to Demonstrate Slow Speed.

C. L. Charley has given $1,000 for the creation of a cup to be given to the car which covers ten miles in the fastest time and ten miles in the slowest time. The idea of this contest, which will take place this month at Ormond Beach, is to prove to buyers that high powered automobiles can be run also at a snail's pace.

The control of the race Mr. Charley is willing to leave unconditionally to the Automobile Club of America. He only stipulates that the contest must be held on Ormond beach, and that the competing cars must be those which figure in the other races during the meeting.

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A. E. MORRISON, MANAGER OF THE PEERLESS BRANCH, GIVING A PARTY OF BOSTONESE A WINTER DEMONSTRATION.

To Give Meaning to Mile Records.

Those much discussed mile records—52 2-5 seconds, made by Oldfield at Denver, and 52 4-5 seconds, made by Kiser at Cleveland—will probably fail of acceptance by the Racing Committee of the American Automobile Association. Chairman Pardington said yesterday that a mail vote had been taken on the question, and that he expected to make a formal announcement of the result some time this week. Both of the records claimed are for intermediate miles, and as it is known that the reports of the timers do not agree as to the time by miles in each of the record breaking rides.

The action of the A. A. A. will put a stop to the practice of picking intermediate miles in record trials of 25 to 50 miles, and require that one-mile records constitute one-mile performances. The honesty of the timers at Denver and Cleveland has not been questioned, but it seems to be the general feeling that th chances of an error in such cases are too great to allow such mile records to be officially accepted.

Has Hurt Fox Terrier Trade.

The automobile's latest crime has come to light. A dispatch from Paris states that the growth of automobilism has practically destroyed the trade in fox terriers. Fox terrier breeders say that the dogs are far too lively to sit still in a swiftly moving machine. On the other hand, the more sedate collie has had a marked rise in favor with chauffeurs. The classic poodle is completely out of date, and toy bulls reign supreme for the present among lap dog varieties.

Glidden's Wire From the Fijis.

On New Year's Eve Globe Girdler Glidden was in the Fiji Islands. In spite of the seventeen hours difference in time, Mr. Glidden decided to send good wishes to his friends in America. Accordingly he calculated the time accurately enough to have the message arrive in Boston about three minutes after midnight. In one of the messages the donor of the Glidden Cup stated that the inhabitants of the island had christened his motor car "Father of all devils."

Mrs. Kirk's Christmas Present.

A Christmas present to be proud of was that given by David M. Kirk, of Pittsburg, to Mrs. Kirk. It is a 32 H. P. Pierce Great Arrow, with a special limousine body, designed to seat six passengers, and was ordered through the Banker Bros. Co. The car is fitted up elaborately, having an electric heating and lighting plant and every other convenience found in broughams and similar vehicles.

Where Touring is Expensive.

In the majority of small Bavarian towns the automobilist is made to contribute to the wear and tear of the roads. In order to carry out this bylaw effectually a fixed sum is collected in tolls at the boundaries of the respective villages or towns. To go from Bamberg to Nuremberg it costs 55 cents for the distance of seventy-three kilometres. The fare by train is $1.25. This manner of increasing the municipal receipts added $1,200 in six months to the wealth of one small town.

Railway President's Electrical Timer.

Colonel E. H. R. Green, of Dallas, Texas, whose fame as the son of Hetty Green is greater than his renown as the president of the Texas Midland Railroad, and who of late has been prominently in the eye because of his racing cars, has invented an electrical apparatus for timing them. "Copper tapes stretched across the track at intervals register the time on watches placed in the judges' stand," is the description wafted up from Dallas. Mr. Green is also interested in a project to build a three-mile track.

Barney Oldfield has felt impelled to rise to deny that he is in St. Louis to assume the management of an automobile company.

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TO GRIND OUT NEW LAWS

New England Legislative Mills Unlimbering for Action—New Hampshire in Line.

In five of the six New England States legislatures are convening this week. The exception is Vermont, which has recently ended its session. That automobile legislation will be brought up in some form or other in each of the other five states there is regarded as certain.

At the present time in all the New England States, with the exception of New Hampshire, laws have been passed governing the operation of motor vehicles. These laws are nearly uniform, particularly those relating to registration of cars and drivers. They have been copied one from another, Vermont being the last state to enact a registration law.

New Hampshire stands alone among the States. There is no law on its statute books in any way governing speed or registration of vehicles. But it is known that at the coming session of the legislature at Concord there will be passed some sort of laws. Just what they may be is problematical.

Whatever laws are passed by the Granite State legislature will be of interest to thousands of people, not alone throughout New England, but all over America. New Hampshire, by reason of its delightful climatic conditions in summer, is the mecca of thousands of visitors from every State in the Union. Among the number are hundreds of motorists. Therefore, while it is not expected that New Hampshire will place itself on record as fawning to owners of these vehicles, still it is thought that there will be no prejudicial sentiment animating the representatives.

An idea of what New Hampshire may enact in the way of automobile legislation has been given by one of the members of the State legislature. He says that when the session opens in January a bill will be presented to enable the State to construct good roads.

This bill has already been drawn up, and it is said to have the sanction of the Governor. It was indirectly brought about by the increase in the number of vehicles, particularly automobiles, which have been traversing the roads lately. The benefit to the State and the public will be inestimable. These proposed roads, three in number, will go through the Connecticut valley, another to the sea, and the third through toward Maine.

There will also be regulations regarding speed. What this may be is merely conjecture. It will probably vary from ten or a dozen miles in the cities to a limit of perhaps twenty outside. That there will be a registration law is practically certain. It will be about on the same lines of those in the other States.

Y. M. C. A. will Instruct Ladies, too.

Springfield, Mass., will next week be added to the increasing number of cities having regularly organized automobile instruction schools. It will be opened on January 11 in the local Y. M. C. A. building, and will be divided into two courses. The first of these will consist of a series of eight lectures on the construction, operation and repair of gasolene carriages of all types, by Parker H. Kemble, superintendent and consulting engineer of the Boston automobile school. The first of these lectures, which will be held on Wednesday evening, January 11, will be free. All the eight lectures will be open to both men and women, and will be held weekly on Wednesday evening. The Springfield Automobile Club has contributed $100 toward the expenses of these lectures.

The second part of the course will be for men only. It will consist of six talks by D. L. Gallup, instructor of mechanical engineering in the Worcester "Tech," illustrated with parts of the automobile. They will be given on Monday nights, beginning with January 16, and will be upon the engine construction and repairs of minor breaks. These will be followed by shop demonstrations at the factories of the Knox and the Stevens-Duryea companies. At the end there will be a course in driving automobiles for those who have successfully completed the shop course.

Lights for All in Massachusetts.

A bill has been drafted for presentation to the Massachusetts legislature providing that all vehicles shall carry lights after dark. Motorists throughout the State are being urged to support it, a systematic canvass being conducted with that end in view.

The proposed bill provides that every vehicle propelled by muscular power, carriage or bicycle shall from an hour after sunset to an hour before sunrise, when travelling on a public highway, carry lights which shall be visible 300 feet in front and in the rear of the vehicle.

Legislative Deluge in Indiana.

So many ambitious members of both houses of the Indiana State Legislature have announced their intention of introducing automobile bills during the coming session that it has been suggested that a special joint committee of House and Senate be appointed to receive the many bills and embody the principal features of all of them in one measure. One of the bills proposes to legalize twenty miles an hour in the country and ten miles an hour in cities and towns. This bill provides for a fine of $200 for each violation.

Up "Pike's Peak or Bust."

Out in Colorado they are still talking of the proposed "Pike's Peak or Bust" climbing contest, which they hope to run next summer. The most tangible thing about the affair that has developed to date is the agreement of the Colorado Springs Chamber of Commerce, which thinks the affair would be a good advertisement for the city.

OPPOSES INTER-CITY RECORDS

Chicago Club Takes Action to Suppress Such Scorching and Aims to Form State Association.

Indiscriminate road racing has been formally frowned upon by the board of directors of the Chicago Automobile Club in resolutions which they recently adopted. Their action is a result of the many attempts at record breaking between the Western metropolis and nearby cities, Milwaukee, South Bend, Cleveland and St. Louis being favorite objective points for the would-be record breakers. The directors believe that such rides are responsible for much ill feeling toward all motorists on the part of farmers and the officials and citizens of the smaller towns through which the record breakers travel at high speed.

The resolutions are as follows:

Whereas, The attention of the board of directors has been called to the increasing number of automobile road races and attempts to lower the record for automobiles between Chicago and certain other cities; and,

Whereas, In making such attempts automobiles are driven at a high rate of speed, in excess of the rate permitted by law; now, therefore,

Be it resolved, That it is the sense of the directors of the Chicago Automobile Club that such road races and attempts to lower records should not be indulged in by members of this club without having first obtained permission from the various municipal corporations through which the route to be traversed shall pass.

The directors have instructed Secretary Gorham to send invitations to each automobile club in the State of Illinois to send a delegate to a meeting which is to be held at the Chicago Automobile Club, on February 8. The directors hope to then form a State association of automobile clubs, which will work for better roads and for more reasonable legislation. It is planned to have the association issue a road book of the State and to erect signs along highways which are used by motorists.

Boston's New Club Chooses Officers.

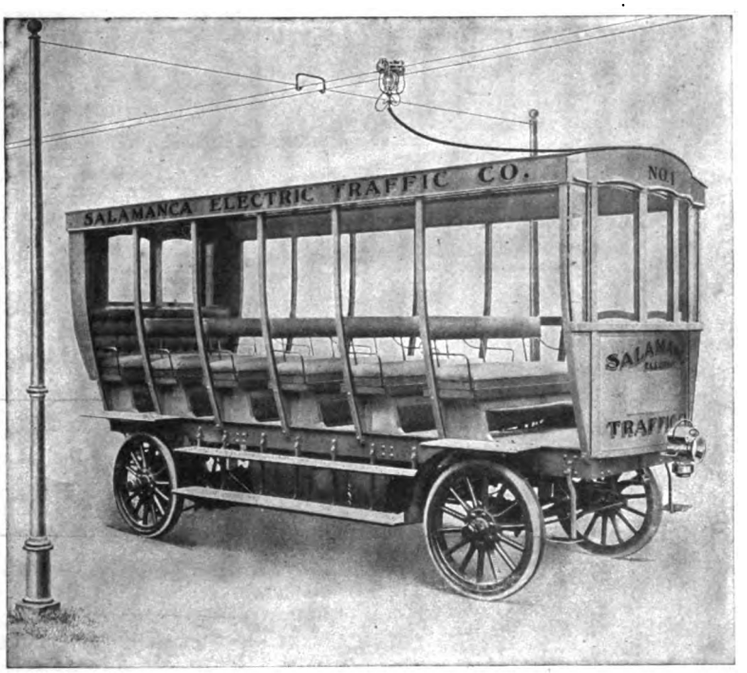
Bay State Automobile Club is the title of Boston's new club, the organization of which has been formally completed by the election of the following officers: Lewis R. Speare, president; F. H. Tudor, vice-president; H. L. Bowden, treasurer; J. C. Merrison, secretary; Harry Fosdick, A. E. Gilmore and W. W. Burke, directors. Mr. Speare is of the well-known oil producing firm which bears his name; Mr. Tudor is an official of the Massachusetts Automobile Club, and Mr. Bowden is the Waltham millionaire who has earned fame on the track. The new club purposes reaching out for members in all parts of the State, and to "do things" will be its aim.

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TO TRY TRACKLESS TROLLEY

New York Town Purchases Cars and Prepares to Operate a Public Service.

While much has been heard of the trackless trolley, very little has been seen of it in this country. Salamanca, N. Y., has, however, actually moved in that direction, and a service of the sort is expected to be in full operation next spring, when the Salamanca Electric Traffic Co. erects its pole line. The



accompanying illustration shows the first of the semi-inclosed electric omnibuses with which the line is to be equipped, the cars being manufactured by the Auto-Car Equipment Co. of Buffalo. The first one is equipped with a storage battery of forty-two cells, 15 M. V., which will give the car a radius of forty miles on a single charge over level roads. As soon as the pole line is installed the storage battery will be dispensed with.

The car shown is 16½ feet long, with a wheel base of 10 feet and a 5-foot track. It has double motor equipment and direct chain drive to rear wheels, platform springs, three point suspension. The axles are solid steel, with roller bearings throughout. The heavy artillery wooden wheels are shod with 36-inch endless solid rubber tires, 4 and 5 inches wide, respectively. A gear wheel steering device is used. The frame of the chassis is made of seasoned oak, 7x2½ inches, placed edgewise, and the frame is armored with a steel plate 3-16 inch thick bolted to the oak. The brakes are internal expanding, operating in the drums attached to the rear wheels, which also carry the driving sprocket and have extra wide bearing surface. These brakes are foot operated, with an interlocking ratchet, and can be held by the driver on a steep grade.

The body is semi-inclosed, and has, crosswise, four seats, each accommodating four persons. The seats are upholstered with box spring cushions. Five of them have upholstered lazy backs, while the rear seat has a solid back, which is also upholstered. The floor is covered with battleship linoleum. The top is constructed in the same manner as the tops of open streetcars, with self-acting waterproof side curtains, which slide in the grooves of the wooden standards. The car is vestibule front and rear, with a drop sash. The interior has mahogany finish on natural wood. The car is lighted by three overhead incandescent lamps of 16 candlepower, and there is an electric headlight. On the panel front of the vestibule inside are distributed the volt and ammetres, double pole double throw main switch and charging switch, cut-out, etc. The car has an alarm gong, a signal bell for starting and stopping and a fare register.

The horizontal controller is placed under the front seat. The controller lever is at the extreme left, and is provided with four speeds ahead and three reverse. The maximum speed of the car is twelve miles an hour.

The Salamanca company has built and equipped a new power house, and is operating on schedule time at a five cent fare. The present equipment provides for a line of three and one-half miles, and it is expected that this will be extended next spring.

Following the idea of having "taximetre" regulators on horse drawn cabs in Paris, the company operating them fitted an automobile with the same device, which measurer gives the exact distance within a few yards covered by the cab, and also marks the amount due. No extra charge will be made for the automobile, the fare being the same as for other cabs. If it "were not for the 'taximetre' and the red flag," it is added that "the new car might be mistaken for a private brougham."

NO MORE CARBIDE FOR HIM

Bitter Experience that Convinced One Motorist that there are Better Anti-Freezing Materials.

"As an anti-freezing mixture, calcium chloride is all right as long as your water circulating system works properly. But just as soon as anything goes wrong with it, you are bound to have trouble," said a New York tradesman recently.

"It has been my practice for a number of years to fix up my demonstrating cars with an anti-freezing mixture. I have tried glycerine, but it does not satisfy me. In the first place, it is pretty expensive. The best you can do, even if you get the inside wholesale price, is $1 per pound, and it will cost from that price all the way up to $8 per pound, depending on where you buy it. While it does not evaporate very quickly, it does deteriorate, and in a short time you must clean out your tanks and pipes and put in a new supply of both water and glycerine.

"For this reason I always gave the preference to calcium chloride, and got pretty good results from it until this year, when I met with a very peculiar experience. It is my custom to buy the necessary ingredients and prepare the mixture myself. I put four pounds of the salts to each gallon of water, and as the tank of my car holds four gallons, there was sixteen pounds of the salts in the cooling apparatus.

"Everything went well until one day my pump got out of order and the liquid ceased to circulate. Consequently the water got hot, boiled and finally evaporated—all without my noticing that anything was wrong until it was all gone. Unfortunately, as I discovered shortly, only the water had evaporated. The salts were still there. They had caked in the bottom of the pipes, and were as hard as rock. Nothing I could do would get the deposit out, short of taking a cold chisel and hammer and cutting it out. That is what we had to do, and it took many long hours. Now I am very careful not to use calcium chloride as an anti-freezing mixture."

'Frisco Want Less Oil and Less Noise.

Several times legislation prohibiting the dripping of oil from automobiles to asphalt streets has been threatened, and now San Francisco motorists are in a fair way of being saddled with an absurd law on the subject. An ordinance requiring suitable devices to be attached to automobiles for the purpose of preventing oil drippings being deposited on the public streets was passed to print by the Board of Supervisors of that city last week. Supervisor Lunstedt also contended that the noise made by automobiles while standing still in the public streets, owing to the machinery being allowed to run, was a greater nuisance than dripping oil, and suggested that another ordinance prohibiting the noise be passed. He promised to submit such a measure.

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SHAKE-UP SHAKES OUT NEW LIST

Florida's Revised Programme Not of One-Man Variety—Starting Date Set Back One Day.

Having caused the withdrawal of the programme sent out by its self-styled "sole American and foreign representative," the Florida East Coast Automobile Association last week issued the official list of events for the Ormond-Daytona carnival, January 24 to 28, it having been decided that the racing shall not begin until Tuesday, 24th. Entries close on next Tuesday, the entry fee being $20 for each event. The list is as follows:

One hundred miles, international, for the W. K. Vanderbilt, jr., Trophy.

One mile, international championship, for the Sir Thomas Dewar Challenge Trophy.

One mile, time trials, classes A (1,432 to 2,204 pounds), B (851 to 1,432 pounds), and C (551 to 851 pounds).

One kilometre, time trials, classes A, B and C (weights as in events No. 3).

Ten miles, Ormond Derby, open, for the Major C. J. S. Miller Trophy.

Fifty miles, Daytona Handicap, open, for the Florida East Coast Automobile Association Challenge Cup.

One kilometer, Record Race, open, for the H. L. Bowden Trophy.

One mile, steam cars, for the Colonel R. C. Clowry Trophy.

One mile, cars of sixty horse power and under, amateur owners only to drive, for the Colonel L. C. Wier Cup.

Fifty miles, open to American built cars only, for the Lozier Trophy.

Ten miles, Mercedes cars only, for the Allen-Halle Trophy.

Ten miles, Fiat cars only, for the Hollander and Tangeman Cup.

Twenty miles, open, for the Edward R. Thomas Championship Trophy.

Five miles, stock cars, $1,001 to $1,800, inclusive.

Five miles, stock cars, $1,801 to $2,750, inclusive.

Five miles, stock cars, $2,751 to $4,000, inclusive.

Five miles, handicap, open only to the first four cars in events Nos. 14, 15 and 16. No entry or fee required.

Five miles, stock cars, $4,001 to $6,000, inclusive.

Five miles, stock cars, $6,001 to $8,000, inclusive.

Five miles, open.

Five miles, stock cars, $8,001 to $10,000, inclusive.

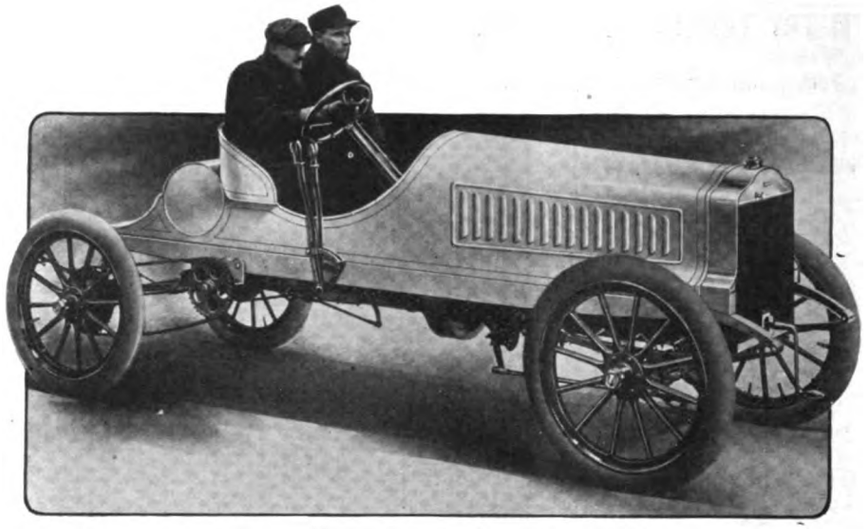
Five miles, Great Ormond Handicap.

Five miles, gasolene stock cars, $650 and under.

Five miles, stock cars, $651 to $1,000, inclusive.

Ten miles, stock cars, $1,001 to $1,800, inclusive.

Ten miles, stock cars, $1,801 to $2,750, inclusive.



MAJOR C. J. S. MILLER'S 6 CYLINDER 60 H. P. THOMAS, WHICH HE WILL DRIVE IN THE FLORIDA SPEED CARNIVAL.

Ten miles, stock cars, $2,751 to $4,000, inclusive.

One mile, time trials, stock cars, price classification as in above events.

Ten miles, handicap, open.

One kilometer, Class A (1,432 to 2,204 pounds).

One kilometer, Class B (851 to 1,432 pounds).

One kilometer, Class C (551 to 851 pounds).

One mile, Class A, as above.

One mile, Class B, as above.

One mile, Class C, as above.

Gymkhana race.

Green Sets Up 100 Mile Record.

To the Dallas (Tex.) Automobile Club belongs the distinction of running the first one-hundred-mile track race in this country, the club having promoted such an event on the fair grounds track on January 2. Colonel E. H. R. Green, one of the club members, who had donated a trophy worth $250 for the race, won the contest, covering the 100 miles in 2:06:00 in a 24 horsepower Pope-Toledo. Five cars in all were entered.

A. B. Wharton, of Fort Worth, Texas., driving a Columbia car of the same horsepower as Colonel Green's machine, was tied with the latter until a bolt broke during the seventeenth mile. Up to that time there had been a great contest between them, and they had been making the miles at the rate of 1:14. The club recently joined the American Automobile Association, and the meet was the first it had held under A. A. A. rules and sanction.

Will Talk Good Roads in Florida.

Thirty-six State and territorial assemblies are to be visited by the crew of the "Good Roads" train, which will start on its travels for the year on January 9 from St. Louis over the Missouri, Kansas and Texas Railway. The National Good Roads Association is the sponsor for the train, which will be operated over other roads after it has finished its work along the line of the M., K. & T. The annual convention of the National Good Roads Association will be held at Jacksonville, Fla., on January 19, 20 and 21.

A. C. A. Clubhouse Will Cost $420,000.

Dave H. Morris, president of the Automobile Club of America, has called a special meeting of the members of the organization for Tuesday evening, January 10, at the club house. The report of the Board of Governors telling of the plans proposed for the new club house and garage will be discussed, and it is likely that some definite action will be taken toward providing the organization with a home of its own.

The plan suggested for the building of a club house and garage calls for the expenditure of about $420,000. It is proposed to raise among members of the club $150,000 by issuing second mortgage 4 per cent bonds in denominations of $500 and $1,000 each, the balance of the $420,000 being taken care of by money on hand and a first mortgage. The Governors of the club have secured the underwriting of more than $100,000 of the second mortgage bond issue. As the Governors believe it advisable that as many members of the organization as possible should be holders of the second mortgage bonds, they have invited subscriptions from their fellow-clubmen until the entire $150,000 has been subscribed.

Wallace to Sell his Racing Cars.

William Wallace, the well known amateur racing motorist of Boston, has announced that his racing cars are for sale. This does not mean his permanent retirement from racing, but he will not be a competitor at the Florida races, as had been expected. To a Boston interviewer, Mr. Wallace made the following statement: "Retire from the racing game? Well, hardly. It is too great a sport. My cars are for sale, it is true, but that simply means that I am going to South America soon to attend to putting the machinery into some mines there. I will be absent from Boston for five or six months, and as my cars will be of no use to me during that time, I have decided to dispose of them."

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Highwaymen, Revised Edition.

Spurred by the example of those ingenious Jerseymen who set up a mock court of justice on the public highway and administered "justice" to unsuspecting motorists, pocketing the cash received from fines, some Minnesota marauders have turned the trick by establishing "kangaroo courts" on the roads near St. Paul. Gay automobilists, sprinting down country roads at a twenty-mile clip, have been hauled before a bewhiskered justice of the peace, fined heavily, lectured solemnly and told to go and sin no more. Investigation in several instances has proved that both the constable who made the arrest and the magistrate who failed to season his justice with mercy were sharpers. The man with the big stick was not a real constable, and the man with the judicial aspect had no right to impersonate a justice of the peace.

The fact that each town or village in Minnesota has the right to regulate the speed of automobiles while inside its limits gives opportunity for the smooth work of the men who have been holding moot court down Shakopee way. The automobilist, innocent of wrongdoing, is easily victimized when he is apprehended in a country district for driving his machine faster than the local ordinance permits. He does not know what the provision of the ordinance may be, and when, as has been done a number of times recently near Shakopee, he is stopped in the highway and placed under arrest for fast driving, he gladly accompanies the supposed constable to the nearest justice of the peace. Several times the justice has held his kangaroo court in the woods, and farmers say that when the automobile driver has disappeared his money has served to furnish the necessary refreshment for a gathering of choice companions of the road.

Chicago Contributes a Joke.

The halcyon days of the fairy tale originator have by no means passed; he is still ever ready to feed to a gorging public that which they crave. A versatile writer in the Chicago Record-Herald tells of a city automobile on a rampage that skipped the sidewalk and took a header into a shoemaker's basement shop, turning a few somersaults and finally stopping with its wheels in the air, revolving and sputtering. The old cobbler was found jammed into a corner, unhurt, but dazed.

"What did you think it was?" his rescuers gasped.

"I tought," he breathlessly replied, "dot it vas a customer vat vos mad apout his shoes!"

Triangle to Denote Dangerous Turns.

To denote dangerous turns to automobilists triangular signs have been erected in some parts of England. In order to make the idea practical at night time, the same sign is painted on the glass of the street lamps.

The Law That Indiana Farmers Want.

The farmers of Elkhart County, Ind., are very bitter against automobilists, and have circulated a petition to be presented to their representatives in the State legislature. The petition asks for the enactment of a law with the following provisions:

1. Compelling owners and operators of automobiles to provide for each machine large numbers on either side conspicuously displayed at all times.

2. Establishing a speed limit of five miles an hour when passing a horse or horses being driven or ridden on a highway.

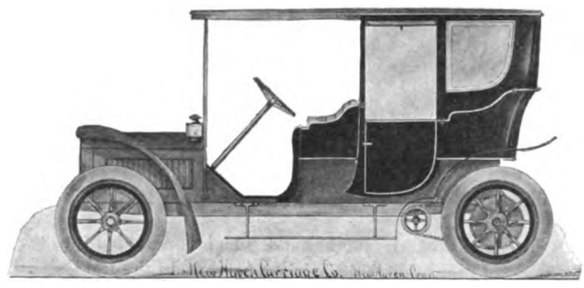
3. Subjecting automobile owners or operators to a heavy fine for refusing to come to a full stop when signalled to by a rider or driver of a horse or horses.

4. Making it a penal offence for operators or owners of automobiles leaving their victims without rendering all reasonable assistance when an accident has occurred, caused by any form of horseless carriage or autocar, and holding owners of all such vehicles responsible for damages caused by them.

Orders Another Railway Automobile.

Two more railroad automobiles to carry passengers have been ordered by the Uintah Railroad, according to reports from Denver. The road runs from Mack, Col., into the Uintah reservation, in Utah, and has had one machine in operation for several months which has given excellent satisfaction.

Automobile Buyers



Desiring really luxurious Tonneaus, Limousines or Landaulets that will be very durable, ride easy, finely painted, having the same attention paid to details they received in their fine horse drawn Broughams and Victorias, can obtain same from the **first** firm in America to build **Automobile Bodies.**

THE NEW HAVEN CARRIAGE CO., New Haven, Conn.

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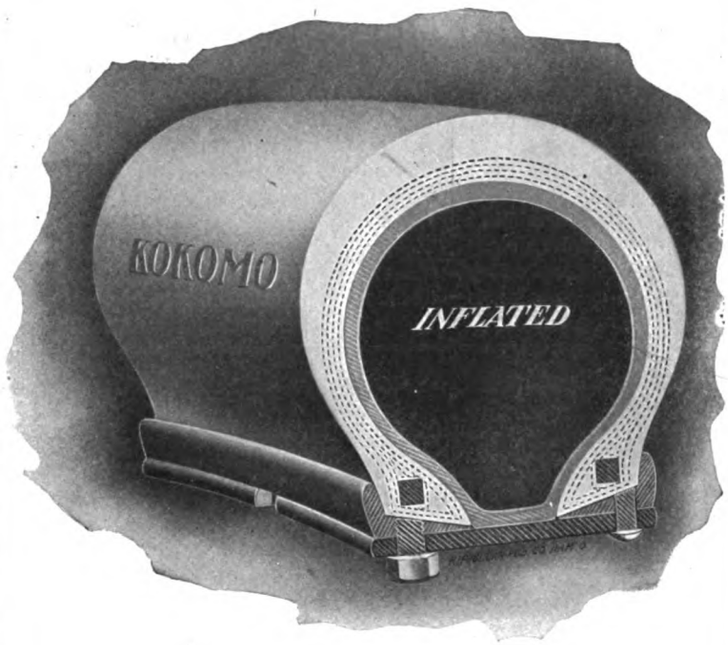
— THAT ETERNAL QUESTION —

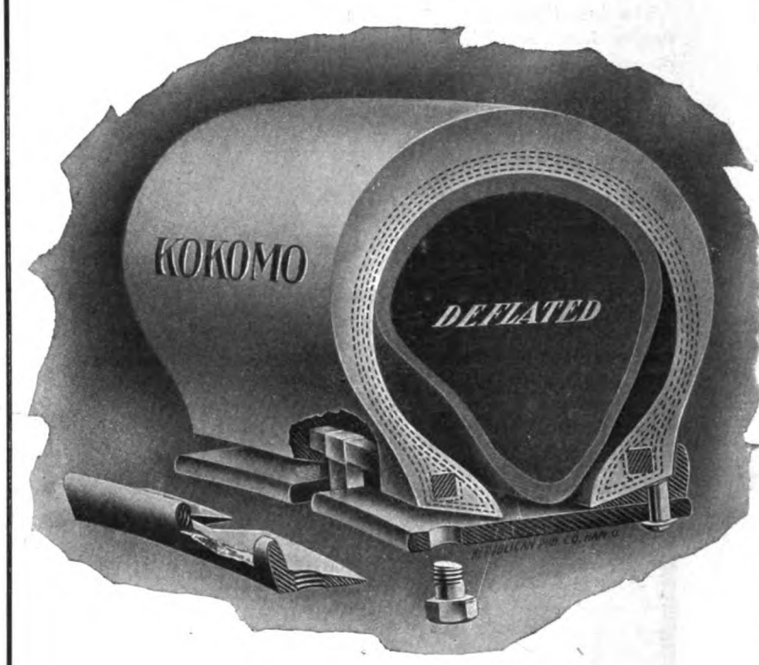
— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permittlng the use of a smaller tire—a saving to purchasers.

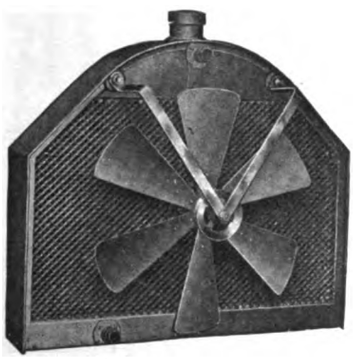
Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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WHITLOCK COOLERS

For 1905.



The Leading Automobile Builder have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of coolis worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT.

The Week's Patents.

778,289. Combined Internal-Combustion and Air Engine. Henning F. Wallmann, Chicago, Ill. Filed August 21, 1900. Renewed December 16, 1902. Serial No. 135,462.

Claim.—1. In an internal-Combustion engine, the combination of a combustion-cylinder, a double-acting compressor, a crank-shaft, pistons in operative connection with said combustion-cylinder, crank-shaft and double-acting compressor, respectively, means for delivering air from said double-acting compressor to said combustion-cylinder on the same side of the piston thereof with each successive cycle of said engine, a source of fuel and means for delivering charges thereof during predetermined cycles only to the same side of the piston of said combustion-cylinder and withholding the same during intermediate cycles.

778,320. Radiator for Autocars. Antoine Loyal, Paris, France. Filed June 16, 1902. Serial No. 112,003.

Claim.—A radiator for motor-vehicles, comprising a vertically disposed series of small continuous parallel tubes bent back and forth into a plurality of parallel horizontal courses, the several tubes of each course being each in a different horizontal plane, a series of parallel radiating tie-plates through each of which all the tubes of each course extend and to which they are rigidly connected, and collectors of large capacity connected to the ends of the tubes.

778,375. Speed Regulator for Explosive Engines. Karl Reinhardt, Dortmund, Germany. Filed November 25, 1903. Serial No. 182,656.

Claim.—In an explosive engine, the combination of the cylinder and inlet valve, of a gas conduit and two air conduits, a valve controlling the same, operating means therefor constructed to move said valve on the charging stroke to first open one air conduit, then to close that conduit and open the other air conduit and the gas conduit, substantially as described and for the purpose set forth.

778,399. Speedometer. Arthur H. Brown, Lynn, Mass., assignor of one-half to Waldo L. Pevear, Lynn, Mass. Filed September 28, 1904. Serial No. 226,255.

Claim.—1. In a speedometer, the combination with a rotatable member, of a pump connected with said member to be driven thereby, a fluid-supply tank or vessel, means for connecting said supply tank with said pump to form a circuit, a fluid in said circuit, a gage communicating with said circuit and responsive to variations in pressure of the fluid in said circuit, and a valve actuated by the fluid pressure in the circuit to regulate the pressure upon the said gage, substantially as described.

778,417. Muffler for Internal-Combustion Engines. Frederick Lamplough, Willesden, England. Filed July 25, 1904. Serial No. 217,993.

Claim.—1. In a muffler for internal-combustion engines, the combination with an expansion chamber into which the exhaust gases are led, of an eductor having an air inlet and an outlet the area of which latter is less than that of the air-inlet, substantially as and for the purpose herein described.

778,425. Heat Radiating Device for Internal Combustion Motors. Henry J. Muntz, Poughkeepsie, N. Y. Filed January 6, 1904. Serial No. 187,869.

Claim.—1. The combination with a cylinder for internal combustion motors of metal

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

A MORE UNIFORM MIXTURE can be obtained by the use of our automatic air governor when applied to the Oldsmobile mixer. This means more power and speed. Easily attached. Not necessary to remove mixer. Sent upon receipt of price, $2.50. Circular upon application.
MORE-POWER CO., Box 175, Lowell, Mass.

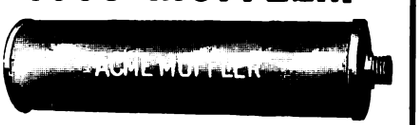
FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address, Room 403, First National Bank Building, Danville, Ill.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

WANTED—Fifteen to twenty traveling salesmen by a well-known and established tire manufacturing company, making standard goods. Only active men who know how to work effectively and all the time need apply. Exceptional opportunity for men of the right sort. Address, TIRES, P. O. Box 649, New York.

FOR SALE—Vises, gasoline engines, and patterns, pumps, tires, copper tanks, belting, pulleys, hangers, shafting, carburettors, lamps, Apple dynamos, storage batteries, steam car fittngs, bells, Edison mimeograph, power air compressor, chains, electric cars $100, $150; steam cars, $150 and up; Autocar. $250; Winton, $175; Winton delivery wagon, $400; Oldsmobile, with top, $200; one hundred cars, all kinds, very low, to clear out; 75 automobiles, $100 and up, all kinds. ATLAS AUTOMOBILE CO., Pittsburgh, Pa.

THE ACME IMPROVED 1905 MUFFLER.



Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

AUTOMOBILE.
STATIONARY.
MARINE.

ACME MOTOR CAR & REPAIR CO.,
Cleveland, Ohio.

Southern Agents: A. L. DYKE, 311 Pine St., St. Louis, Mo.
Eastern Agents: SMITH & EDWARDS, 116 Nassau St., New York City.
Western Agents: E. J. DAY & CO., 819 Mission St., San Francisco, Cal.

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comb strips having the flaring ends of their teeth cast in said cylinder, substantially as described.

778,451. Speed and Distance Recorder for Tram-Cars, Motor-Cars, &c. Henry Hartley and Vincent Canova, Birmingham, England. Filed February 4, 1904. Serial No. 192,012.

Claim.—1. In speed and distance recorders having a continuously travelling log sheet or register for tram-cars, motor-cars and the like, the combination consisting of a scriber adapted for movement at right angles to the direction of motion of the said log sheet or register, a spirally grooved spindle engaging and imparting movement to the said scriber, and a centrifugal governor connected with and imparting motion to the said spindle, substantially as set forth.

778,455. Motor-Vehicle. Ralph C. Lewis, Boston, Mass. Filed April 19, 1904. Serial No. 203,876.

Claim.—1. The combination with a vehicle, of a hood mounted thereon, a motor-cylinder located within the hood, and a rearwardly and inwardly inclined deflector having its outer end projecting from the exterior of the hood and its inner end located directly contiguous to, but spaced from the cylinder for directing air against the same.

778,460. Spring for Automobiles or the Like. John W. Nesmith, Denver, Colo. Filed September 19, 1904. Serial No. 225,017.

Claim.—1. In a vehicle, the combination with the supporting-axle and vehicle-body, of an elliptical spring supported by the axle, a spiral spring supported by the central portion of the elliptical spring, and a connection between the body and spiral spring, substantially as described.

778,495. Pneumatic Tire or Other Flexible Tubular Article. Arthur H. Marks, Akron, Ohio. Filed May 3, 1904. Serial No. 206,146.

Claim.—1. A tire cover comprising a plurality of layers of thread, said layers being of varying degrees of elasticity and arranged with the layer of maximum elasticity innermost and each succeeding layer of less elasticity than its predecessor.

778,496. Pneumatic Tire or Other Flexible Tubular Article. Arthur H. Marks, Akron, Ohio. Filed May 3, 1904. Serial No. 206,147.

Claim.—1. A tire-cover comprising layers of fabric, each layer being cut at a different angle, the innermost layer being cut approximately bias, and each succeeding layer at a greater angle than its predecessor, for the purpose set forth.

778,542. System of Equilibrium for Motors. Arthur C. Krebs, Paris, France, assignor to Ste. Ame. des Anciens Etablissements Panhard et Levassor, Paris, France. Filed August 9, 1901. Serial No. 71,516.

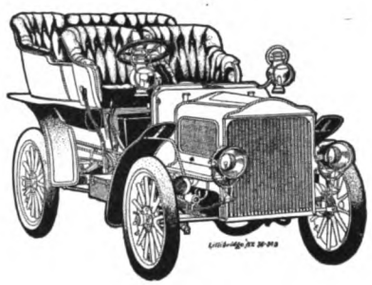
Claim.—1. In a two-cylinder motor, means for equilibrating the disturbing couple created by the reciprocation of the masses of the pistons and their rods, which consists of a fly-wheel unsymmetrically proportioned, and a counterweight upon the crank, the fly-wheel and the counterweight being arranged and proportioned to produce a couple which equilibrates said disturbing couple.

778,560. Supporting and Shifting Battery for Automobiles. Allan H. Whiting, Orange, N J. Filed September 9, 903. Serial N 173,877.

Claim.—1. In combination with an automobile, a support for suspending a batte case beneath the same, said support consi ing of a ledge or angle iron providing channel-way for receiving the correspondi part of the battery case, and opposite t said ledge a second adjustable support f receiving its corresponding portion of sa battery case.

HIGH-GRADE LAMPS
Acetylene Gas and Oil
ATWOOD MFG. CO.,
Amesbury, Mass.

The INCOMPARABLE WHITE
THE CAR FOR SERVICE



WHITE WINS FIRST PLACE

Unequalled performances in every reliability and endurance contest, a unique record for service in the hands of private owners, and a notable series of victories in track and hill-climbing competitions have won for the WHITE Steam Car the first place in the esteem of discriminating automobilists.

Write to us for printed matter.

WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.

B & J-36-50



IT'S AWFUL EASY to handle work done by our process of ELECTRIC WELDING.
Send us a trial job or write us first for quotations if you like.
THE STANDARD WELDING CO., Cleveland.

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THE MORGAN & WRIGHT CLINCHER
WAS THE BIG CLINCHER TIRE SUCCESS OF 1904.

STORAGE BATTERIES FOR EVERY SERVICE

CHICAGO BATTERY COMPANY
MANUFACTURERS OF
STORAGE BATTERIES
OFFICE, 1421 MICHIGAN AVENUE
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TELEPHONE 4644 CALUMET
DURO
ACCUMULATORS
PATENTED

Chicago, Dec. 22, 1905.

Morgan & Wright,

Chicago.

Gentlemen:

It gives me the greatest pleasure to let you know how well the Morgan & Wright tire has stood up on our Knox automobile. The machine was delivered to us in April with a set of ------ tires on same. Inside of a month one of these tires was used up. It was then replaced with a Morgan & Wright tire which has outlasted the three original tires which have gradually been replaced with your clincher. This tire, which was put on in May and run almost ever since, looks as good as new.

Yours very truly,

CHICAGO BATTERY COMPANY.

Secretary.

A tire that has MADE GOOD to car owners everywhere, under all sorts of conditions.

MORGAN & WRIGHT, CHICAGO.

New York Dayton Detroit Atlanta St. Louis San Francisco

Space W, New York Show.

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DAIMLER MFG CO.
LONG ISLAND CITY
N.Y.
MANUFACTURERS OF

American
MERCEDES
AUTOMOBILES

IN DESIGN, WORKMANSHIP, PATTERNS AND MATERIALS

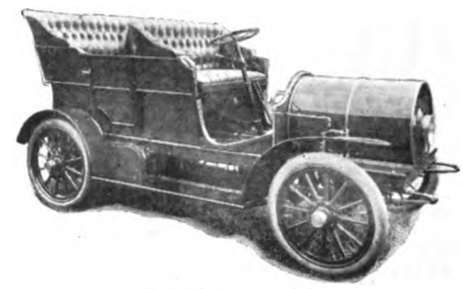
the 1905 American Mercedes
will be
an EXACT duplicate of the 1905 Cannstatt Mercedes
of 40-45 h. p.

We have the sole right to build MERCEDES cars in America.

Look for our car at the New York Show

Address

DAIMLER MANUFACTURING CO.
953 Steinway Avenue, - LONG ISLAND CITY, N. Y.



PRICE, $1500.

THE NEW

GROUT

FOR 1905.

A few of the Leading features in construction and equipment that appeal to everyone interested.

Twelve H. P. horizontal engine, running in an aluminum case with new continuous oiling device, lubricating every moving part positively. 18" copper, wire bound, boiler of our own make, *thoroughly guaranteed*. New one piece case iron burner with noiseless pilot that cannot be extinguished by any wind. New throttling device in connection with perfected superheater. New fuel system that eliminates complication. Power, air and water pumps that run off countershaft and remove all illegitimate strain from the engine. Anti-Freezing device Car can be left standing in zero weather. Side chain drive. Internal expanding brakes of new construction. Automatic drought arrangement. Very long springs and most modern body hang up. The equipment includes full set of tools and parts in special tool case on running board. Large acetylene headlight and acetylene water glass lamp from one generator. Two side oil lamps, all of brass. Large horn and tube.

GROUT BROS. AUTO CO., 287 E. Main St., Orange, Mass.

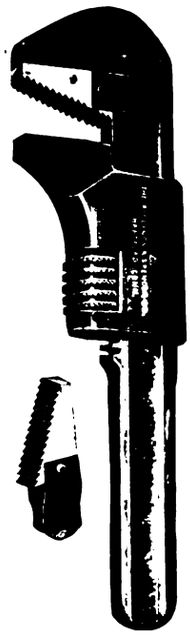
A GOOD CAR

Is Known by

ITS EQUIPMENT.

To be prefect it must have perfect tools.

The best imported and domestic cars have B & S tools in their kits.



THE BILLINGS & SPENCER CO.,

Hartford, Conn.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This new edition of this handsomely bound and artistically printed book, containing illustrations of about 125 gasolene cars, will be ready for mailing about Feb. 1st, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

The 1904 edition is now out of print.

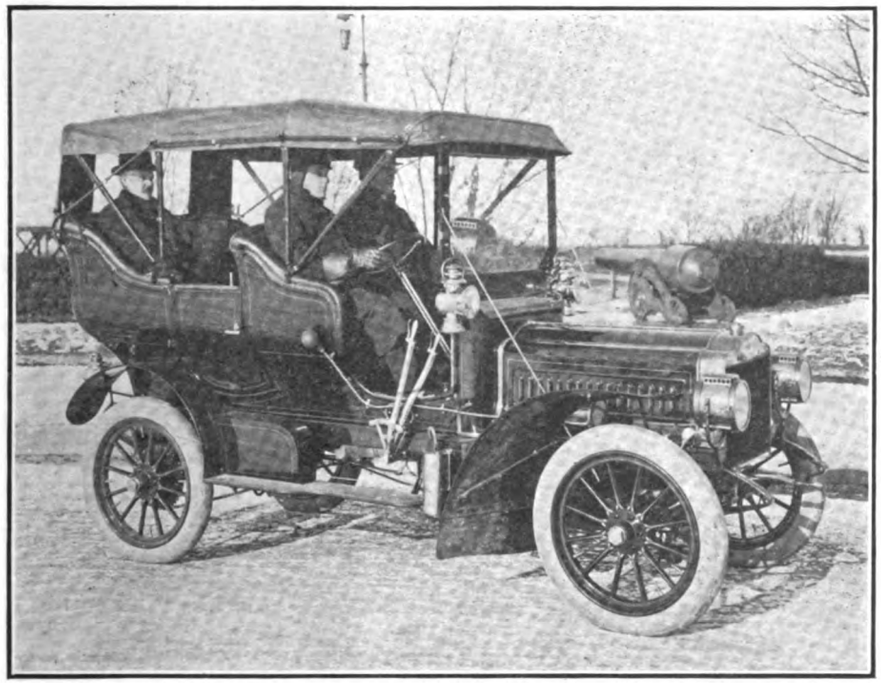
Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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COL. SPRAGUE'S CANOPIES.



A Sprague Extension Top on a **"Thomas Flyer"**; recognized as the correct thing in tops.

See our Exhibit at New York, Chicago and Cleveland Shows.

Send for Catalogue.

The Sprague Umbrella Company,

Norwalk, Ohio, U. S. A.

The Bloom of Youth

so sadly lacking in most cars after they have been in service, may not only be retained, but actually enhanced by the use of

Rome Linseed-Oil Soap

in cleaning. Not only **cleans**, but **preserves.**

Everyone is familiar with the softening, soothing properties of Linseed-oil. In **Rome Linseed-Oil Soap** they are found in their fullest perfection.

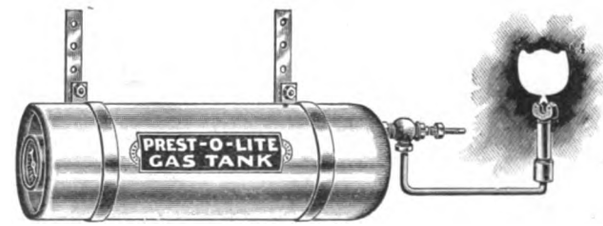
You Could Bathe a Baby With It

and the baby would be better off for it. The highly finished surfaces of automobiles and fine carriages retain their lustre unscratched and minus the streaked and blotched appearance when cleaned with **Rome Linseed-Oil Soap.**

Put up in barrels, half-barrels and pails. Send us a trial order. Money back if not satisfactory.

ROME SOAP MFG. CO., Rome, N.Y.

The Prest-o-Lite Gas Tank



The new system of acetylene lighting for automobiles and launches. More than 1,000 Prest-o-Lite Tanks sold since September 1st. More than 100 of the best agents in America have placed orders for Prestolite Tanks.

TEN THOUSAND Tanks will be sold in 1905. The wide-awake dealers are signing up agencies now. Write us for catalogue and full information.

The Concentrated Acetylene Co.

INDIANAPOLIS, IND.

New York Show Space, 52. Chicago Show Space, 326.

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KEEP YOUR EYE ON TWO THINGS.

THIS SPACE NEXT WEEK

AND

OUR EXHIBITS AT THE SHOWS.

Our New Four Cylinder. The BEST that MONEY and BRAINS can MAKE.

(Actual) 28 H. P.—$2,750.

ACME MOTOR CAR COMPANY,

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1407 Michigan Boulevard,
Chicago, Ill.,
Our Western Distributors.

READING, PA.

We will exhibit at the
New York and Chicago Shows.



Aluminum
Canopy Tops,
Extension Tops,
Three-Bow
Leather Tops,
Cape Cart Tops,
Seat Upholstering,
Aprons and Hoods.

LEINBACH BROS., 253-255 Jefferson Ave., DETROIT, MICH.

Oldest Canopy Builders in America.

TRY US FOR

PRESSED STEEL FRAMES

We are making them from the Highest Grade of Cold Rolled Steel under the most perfect conditions of manufacture.

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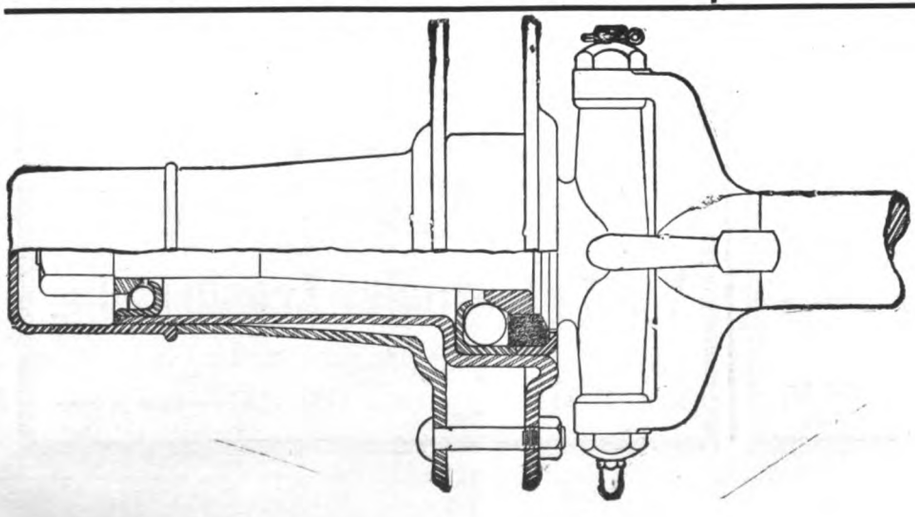
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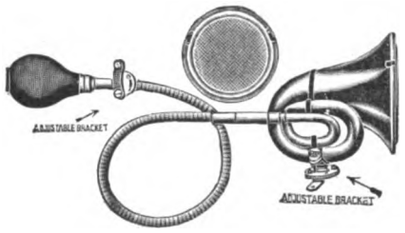
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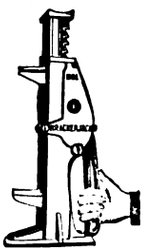
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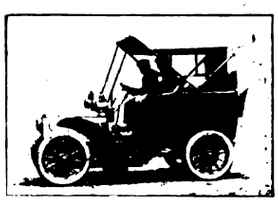


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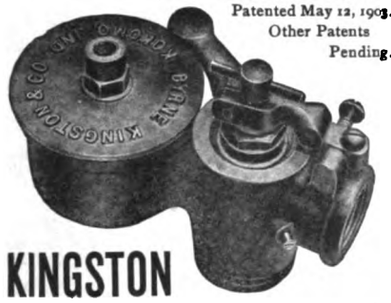
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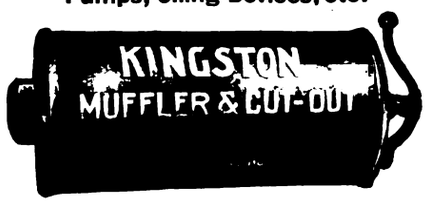
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"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 88 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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It you are going to build automobiles you will want this circular. It describes our Axles, Change Gears, Cone Clutches, Mufflers, Steering Gears and other standard parts. All of these parts have been designed with unusual care. They are suitable for cars of all classes.

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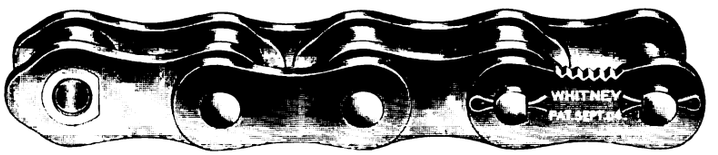
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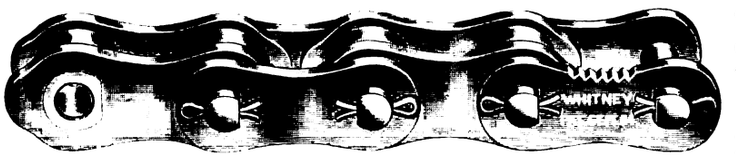
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Secure Souvenir of the New York Automobile Show at "WHITNEY" Chain Exhibit.



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All links on both sides are Riveted with exception of the one Connecting Link shown.



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All links on one side are Riveted and all links on opposite side are Detachable. One link only is considered the Connecting Link, this being distinguished from the others by notches in the top surface.

The Whitney Mfg. Co., Hartford, Conn.



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1. Oldsmobiles have more reliability, more comfort, more value received and better appearance. We build by thousands to give these qualities at a low price.
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5. Mt. Washington and Eagle Rock hill again proved Oldsmobile hill climbing qualities. You take steep grades on high gear with all our new cars.
6. Oldsmobiles go wherever you see them, and you see them wherever you go.
7. Business and professional men are our largest customers. To them the Oldsmobile means a saving of at least two hours' time per day.
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9. Twenty years' experience and unequalled manufacturing facilities make the Oldsmobile the best thing on wheels.
10. "As good as the Oldsmobile" is often heard. What could be better?

THESE CARS CAN BE SEEN AT THE NEW YORK SHOW.

7 H.P. Regular Runabout, $650.
7 H.P. Touring Runabout, $750.
10 H.P. Light Tonneau, - $950.
20 H.P. Touring Car, $1400.
Light Delivery Car, 1000.
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The FORD Cars are the Stars of the Show.



The Ford Model "C"

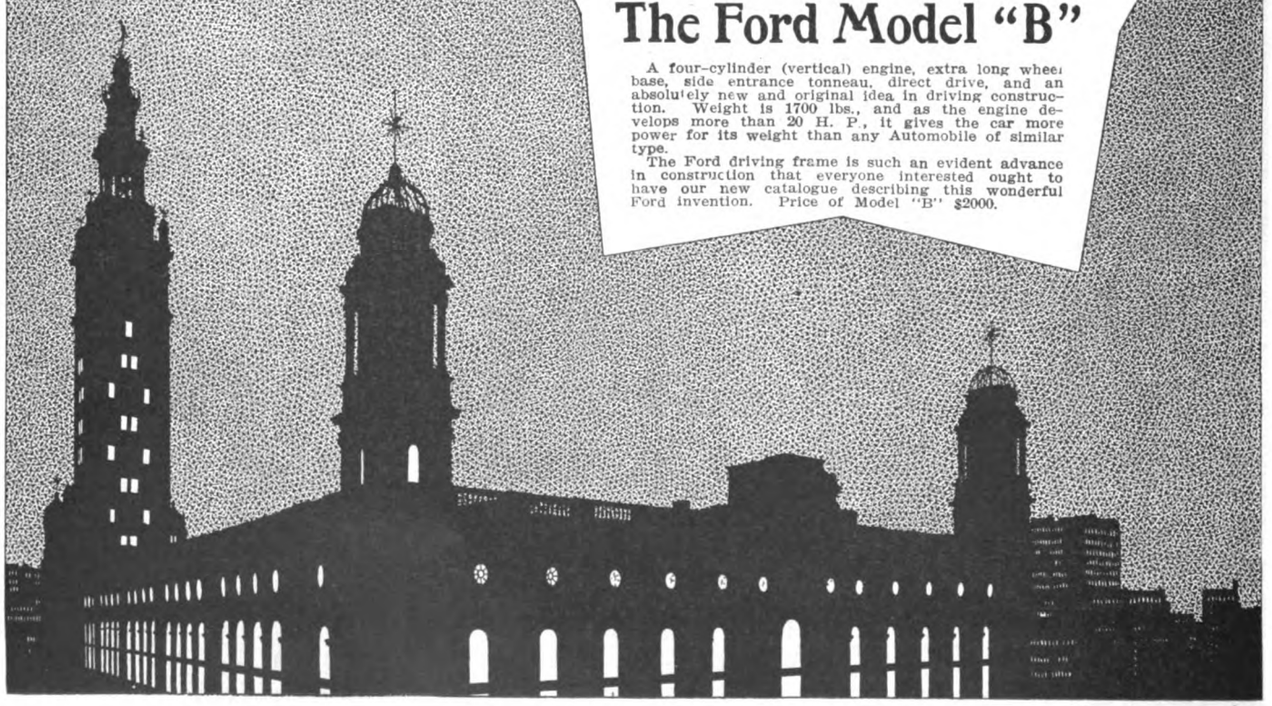
has a 10 H. P., double opposed motor with the successful Ford planetary transmission, a lengthened wheel base and perfect distribution of weight, making it the most practical car on the market for business or professional men or for ordinary family use. The price of Model "C" is $950, with detachable tonneau, so the car can be used as a runabout if desired.



The Ford Model "B"

A four-cylinder (vertical) engine, extra long wheel base, side entrance tonneau, direct drive, and an absolutely new and original idea in driving construction. Weight is 1700 lbs., and as the engine develops more than 20 H. P., it gives the car more power for its weight than any Automobile of similar type.

The Ford driving frame is such an evident advance in construction that everyone interested ought to have our new catalogue describing this wonderful Ford invention. Price of Model "B" $2000.



Economy of maintenance, always a feature of the Ford cars, is further guaranteed in the 1905 Models, by light, strong construction and mechanical simplicity and excellence.

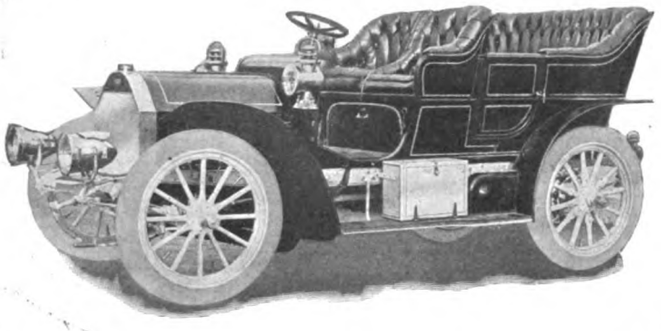
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Canadian Trade supplied by FORD MOTOR COMPANY, of Canada, Ltd., Walkerville, Ont.

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1905 MODELS—15-20 h. p., 2,800; 20-25 h. p., $3,700;
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We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

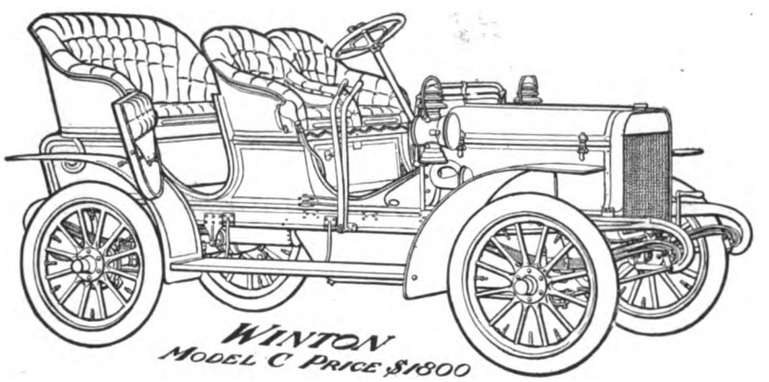
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These Advantages are Exclusive Winton Features.

All working parts immediately accessible and removable, without detaching cylinders from crank case or uncoupling oil, water, electric or air connections.

Air control, whereby operator can graduate speed from 4 to 60 miles an hour, without touching a speed lever or changing gears.

Ignition by gear-driven magneto and single non-vibrating spark coil. No dry or storage batteries. No intricate, multiple, vibrator spark coil.

Lubrication absolutely automatic and positive. No springs, needle valves, sight feeds, or pressure. Lubrication in exact proportion to motor speed. No splash lubrication anywhere—even connecting rod bearings oiled mechanically.

Springs of unique design, combine resilience and resistance in ideal proportion. Add 30 per cent to life of motor. Take half the wear off the tires. Make motoring always comfortable.

Screw and nut steering gear, cannot wear unevenly. Cannot "wedge"—hence is always safe.

Simplicity.—One pedal and two levers control all transmission clutches and brakes. Operation easy to learn.

Price.—Cars of equal horse power are listed by other makers at from $500 to $3,000 higher than Winton prices, and have none of the exclusive advantages of Winton construction. Winton cars combine highest quality with lowest price.

Five Models—All with Four Cylinder Vertical Motors.

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Model A, Side Entrance,	**40-50 H.P., $3500**
Model A, Limousine,	**40-50 H.P., $4500**

Get Catalogue No. 3.

The Winton Motor Carriage Co.

MEMBER A. L. A. M.

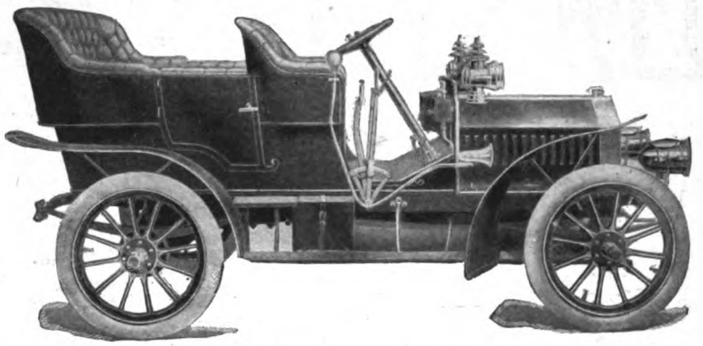
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POLAR COMPOUND
Keeps water fluid at 10 *below* zero. One filling lasts all winter. 25c. per gallon, f. o. b. Cleveland. Shipping cans extra—5 gal., 50c.; 10 gal. 75c.

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THE "CLEVELAND"

A high-grade, light-weight touring car.



18 h. p. four cylinder vertical engine. **Price, $2,800.**

FEATURES:—91-inch wheel base; pressed steel frame; aluminum underbonnet; spark and throttle control on top of steering wheel; three-speed transmission with direct drive on high speed; mechanically actuated inlet and exhaust valves; jump-spark ignition; side door entrance.

We are establishing Agencies. Write for particulars.

CLEVELAND MOTOR CAR CO., = = CLEVELAND, O.

THE BAKER ELECTRIC

AT THE NEW YORK SHOW

WE WILL EXHIBIT OUR LATEST PRODUCT,

The Baker Electric Depot Carriage,

The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES, SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.

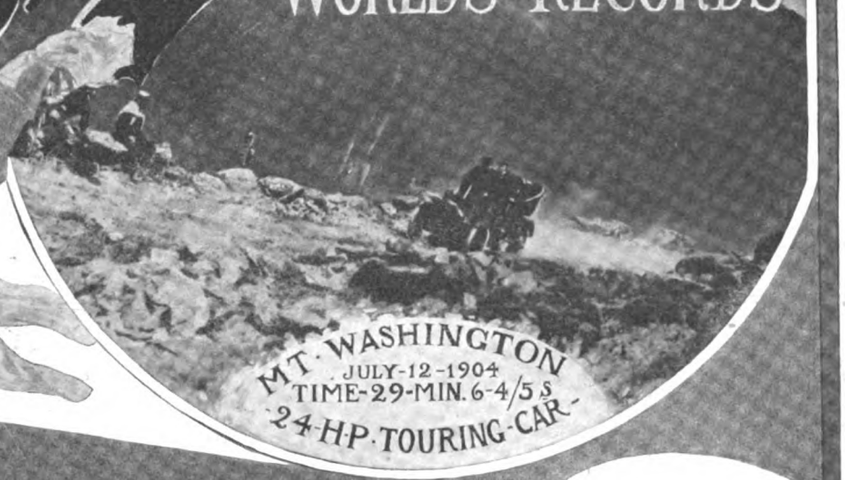


THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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Peerless

WORLD'S RECORDS





TRACK RECORDS
Made in 1904 by Barney Oldfield
in the
PEERLESS GREEN DRAGON

Miles.	Time.
1	0:53
5	4:29
10	9:12 3-5
15	14:03 3-5
20	18:45 2-5
25	23:38 3-5
50	48:40 1-5

THE PEERLESS CAR
also holds all intermediate miles.



1905 MOTORS

are of the same type as used in

PEERLESS "GREEN DRAGON"

These wonderful motors are governed and controlled so perfectly that they run smoothly, silently and, at will, as slowly as an electric, yet there is record making power and speed always in reserve.

Catalogue of New Models Sent on Request.

PEERLESS MOTOR CAR CO.,
CLEVELAND, OHIO.
Member A. L. A. M.



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1905 ANNOUNCEMENT

The Autocar

A NEW TYPE.

We believe that the Autocar in all its types represents the highest excellence in automobile design, workmanship and material. Every Autocar is built on honor. We feel, therefore, that our new type will meet with a cordial reception.

This car, Type XI., larger and more powerful than the other types, has a four-cylinder vertical engine of 16-20 horsepower. The body is built on the newest and most approved French lines. The front seat is divided and both front and rear seats are large and comfortable.

While this car is built upon the tried Autocar principles which have been so splendidly proven, it shows a number of very important improvements making for increased simplicity, ease of operation, safety and comfort.

In fact, though Autocars have always been noted for absence of bewildering intricacy of mechanism, yet no one can but be impressed with the extreme simplicity of this new car. It is a triumph in scientific construction and arrangement.

This car has more than met our highest expectations in the road test. In fact, its performance has been a surprise to experienced automobile men. The power of the car carries it, fully equipped and loaded with five passengers up, tested 12 per cent. grades, for instance, at 20 to 25 miles per hour on the direct drive, while on the level the car attains a speed of 40 to 45 miles. The car is a superior climber on any hill.

Altogether our eight years' experience has enabled us to produce in this type, a four cylinder car we are assured cannot be surpassed by any similar car at any price.

The price of Type XI. is $2000. Ready for delivery January 16.

Type VIII.—Four-Passenger at ($1400,) and Type X.—Runabout at ($900,)

have made *Autocar Reputation.* Each stands at the head of its class for value and efficiency.

Autocars, Types VIII., X. and XI. will be on exhibition at the New York Automobile Show, Madison Square Garden.

Catalogue descriptive of the 1904-05 types will be sent free upon request. This catalogue contains also addresses of our dealers throughout the country who will be glad to give demonstrations to prospective automobile purchasers and explain in detail the merits of our cars.

THE AUTOCAR COMPANY,

Ardmore, Pa.

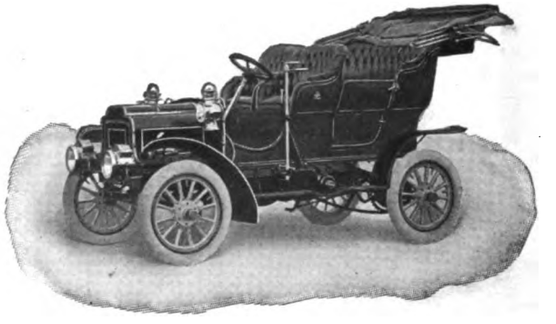
Member Association of Licensed Automobile Manufacturers.

The Reliable

WATERLESS KNOX CARS

FOR 1905.

HIGHER IN QUALITY.



Superb in Style and Finish.

The Knox 1905 two-cylinder (air-cooled) machine is as quiet and as smooth working as any four-cylinder machine, with only half its complications.

14-16 H. P. Side-door Tonneau, -	**$1900**
14-16 H. P. Convertible Surrey, -	**1750**
14-16 H. P. Folding Front-seat Runabout,	**1500**
Single Cylinder Folding Front-seat Runabout,	**1250**

1905 Models will be on exhibition at the New York and Chicago Automobile Shows.

Knox Automobile Co.

SPRINGFIELD, MASS.

Member Association of Licensed Automobile Manufacturers.

Selling Agents in all Principal Cities.

Waterless Knox Automobiles awarded GRAND PRIZE at Louisiana Purchase Exposition.

Will exhibit at the Automobile Show, Madison Square Garden, New York, Jan. 14th to 21st, 1905.

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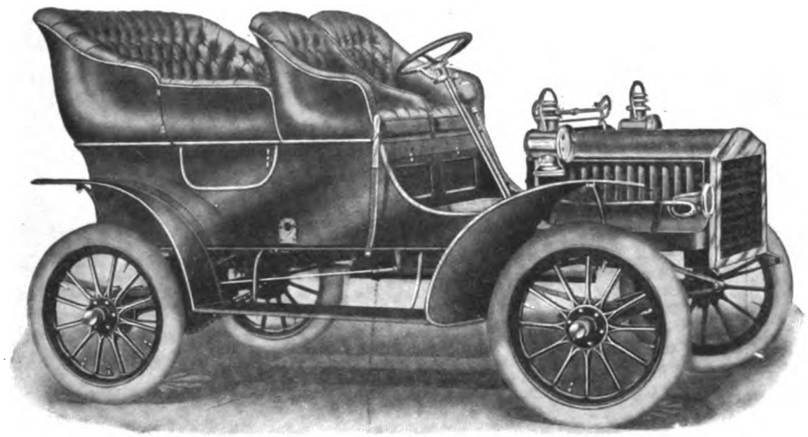
The MICHIGAN

Two Models—"E" and "D."

Light Touring Cars

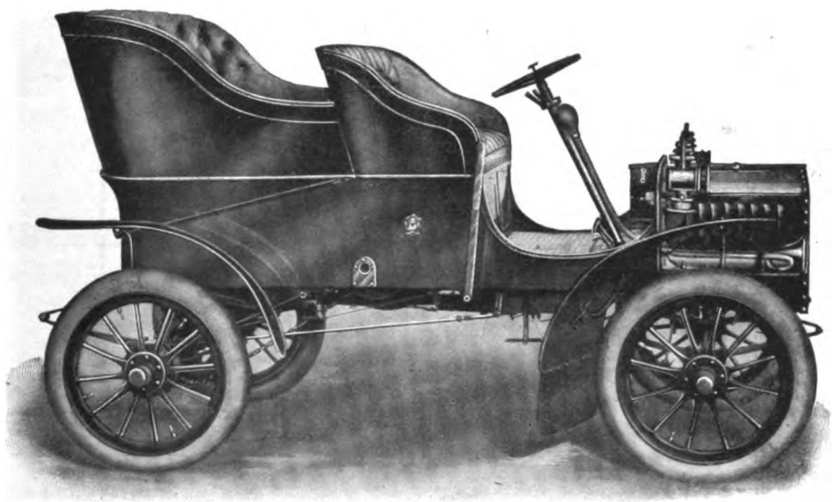
For 1905.

Appropriately Named "The Car of Power."



Model E, 1905 Michigan—Price, $1,250. Wheel Base, 86 Inches.

This superb new creation for the coming season must be seen to be appreciated. It first appeals to the purchaser by its beauty. then it satisfies him by its SPEED, STRENGTH and DURABILITY.



Model D, 1905 Michigan—Price, $1,100. Wheel Base, 80 Inches.

These magnificent cars are equipped with our tried and tested 1904 Motors, 4⅝x5 in., 14 brake test Horsepower, two cylinder, horizontal opposed, Planetary transmission, with two speeds forward and reverse; 1¼ inch chain, Warner differential, Hill Precision oiler, Kingston or Schebler carburetor, expanding rear hub brakes and brake on differential, full elliptic springs of best quality. French hood. Wheels, 30 inch. Diamond or other standard tire, 3½ inch. Construction throughout, first class.

☞ This car is unsurpassed in speed, power, appearance, easy riding, flexibility and general utility by anything at same price. We invite correspondence.

Both Models on exhibit at the New York Automobile Show, Jan. 14-21. Section C, Basement. Call and examine them in detail.

MICHIGAN AUTOMOBILE CO., Makers, Kalamazoo, Mich.

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G&J TIRES

Maximum of Durability
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The thread fabric construction removes all internal friction from the fabric, so that the tires do not heat up under the longest drives at the highest speed. That is why G. & J. thread fabric tires are the most serviceable automobile tires in the world.

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"The Maxwell"



16 H. P. TOURING CAR
Price, for the Present, $1550

8 H. P. TOURABOUT
Price, for the Present, $700

MAXWELL POINTS

are bound to appeal to you on account of their extreme practical value to the average American automobilist.

The small number of parts in "Maxwell" constructions and the absolute simplicity of each part places these two cars in a class by themselves. If you want an automobile that is to be depended upon—one in which there is "nothing to do but ride" and which is a stranger to the repair shop, then get posted as to the "Maxwell." It is the car for *you.*

NO PUMP. NO CHAIN. Double opposed motor in front under the hood and easily accessible in every part. Transmission case and crank shaft cast in one piece of aluminum. Noiseless, smooth and strong.

Agencies for 1905 are now being placed.

MAXWELL-BRISCOE MOTOR COMPANY, - Tarrytown, N. Y.

"PUT DOWN 4 AND SUBTRACT 2,"

And any teacher who knows his book and is free from prejudice cannot but tell you that the rnotor that successfully performs the subtraction and accomplishes with two strokes all that others require four to accomplish is a distinct advance in the art.

The 2-Cycle Motor used in the Elmore Car

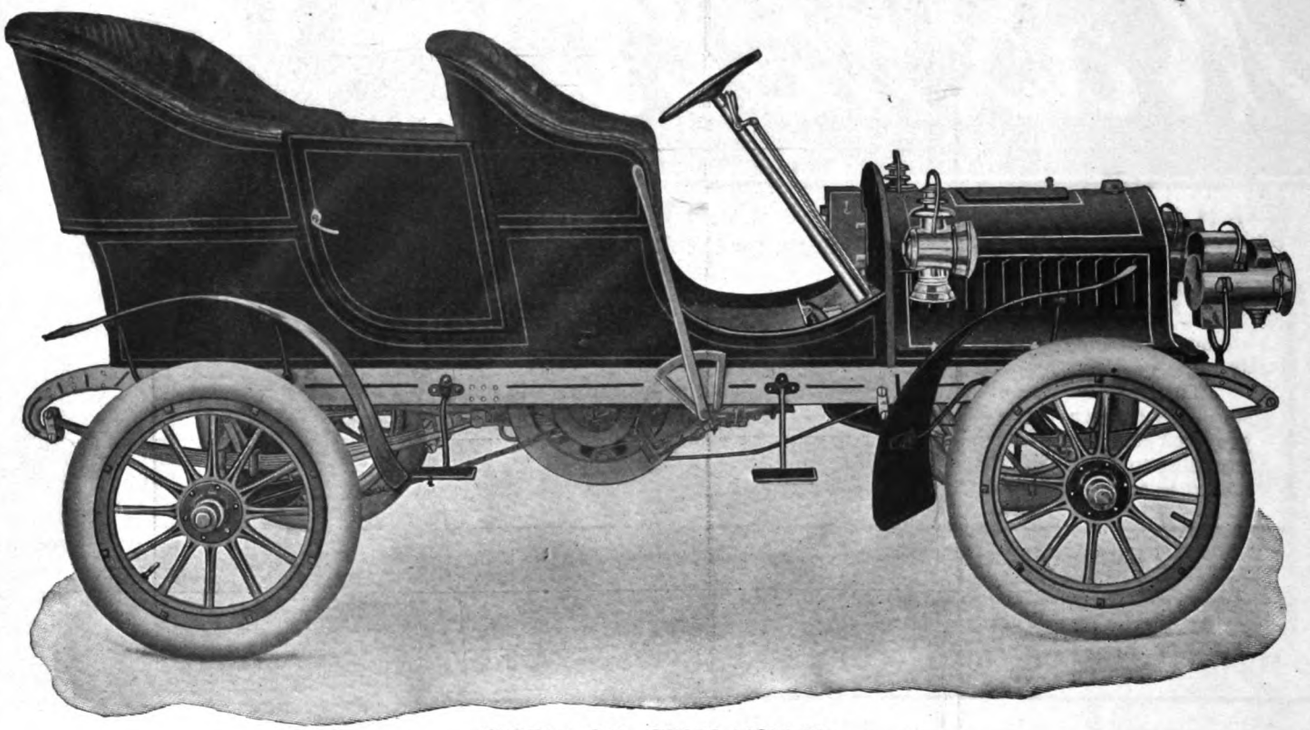
is an advance of the sort. There is no lost motion—no useless strokes.

Our booklets will help you to "study up" on the subject.
They are free for the asking.

ELMORE MANUFACTURING CO., Clyde. Ohio.

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The WAYNE CARS



MODEL "C." PRICE $1250.00.

The Wayne Model "C" is a five passenger touring car, 16 H. P. double opposed motor, planetary transmission, 90-inch wheel base, double side entrance tonneau; in fact, a $2500.00 car in everything but price.

The motor and fly wheel are hung under the chassis frame, making the centre of gravity low. This improves the running of the car, giving stability in turning corners and, by decreasing skidding on the curves, lengthens the life of the tires, so that the expense of running the Wayne is less than any car of similar type.

Model "A" has practically the same mechanical construction as model "C," except that the tonneau has a rear entrance and is detachable, enabling this model to be used as a runabout if desired.

Seven years hard labor has been spent in developing and perfecting the Wayne Cars, and this alone assures purchasers of freedom from many troubles found in new and experimental designs.

The Wayne Model "B" four-cylinder Touring Car will be the talk of the show. 24-28 Horse Power, bevel gear, direct drive, sliding transmission, wheel base 102 inches, side entrance tonneau, weight 1550 lbs. Price $2000.00. This car has fewer parts than any 4 cylinder Automobile made.



MODEL "A." PRICE $1200.00.

NEW YORK SHOW. SPACE C. CHICAGO SHOW. SPACES 107-108.

We shall be glad to demonstrate the merits of our cars at the New York and Chicago Shows, or to send our catalogue to those who appreciate quality and reliability at a moderate price. Will you write us to-day?

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NEW YORK AGENCY—Wayne Automobile Agency, 308-310 W. 59th St. CHICAGO AGENCY—McDuffee Automobile Co., 1449 Michigan Ave.
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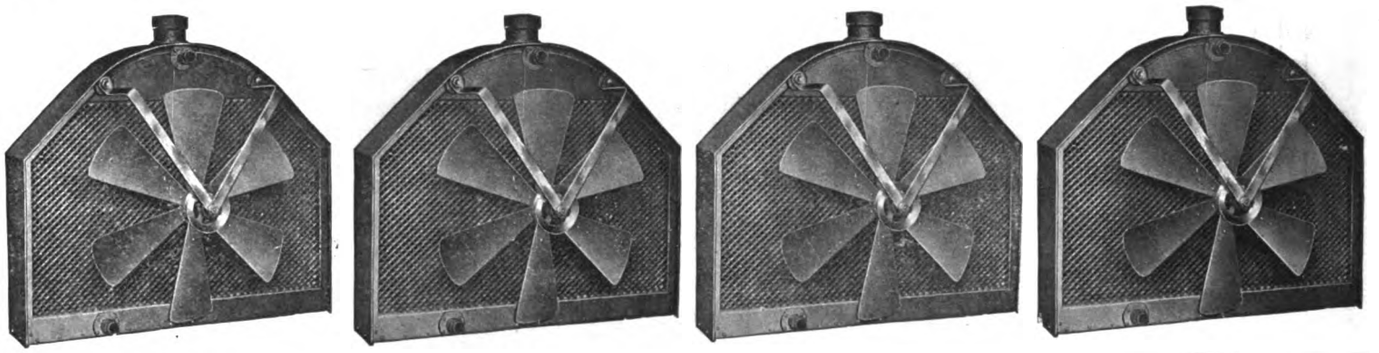
MILLER,

New York City, N. Y.

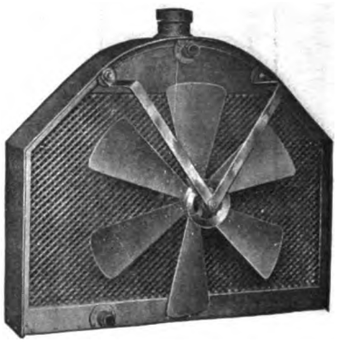
Boston Branch, 202-204 Columbus Ave.

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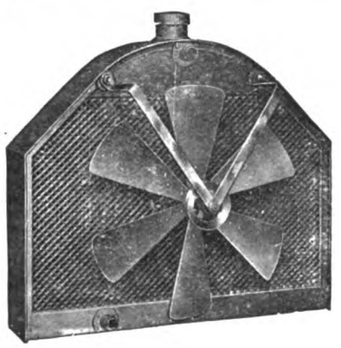


The Name

WHITLOCK

on a Cooler

is an index to the quality of the car.

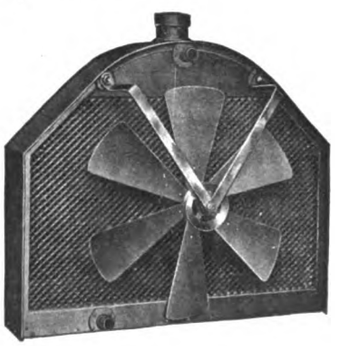


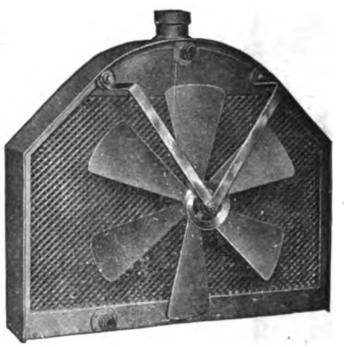


Seek where you will, you will find Whitlock coolers only on those high grade cars, the reputation of which have made the reputation of the American industry.

We have manufactured
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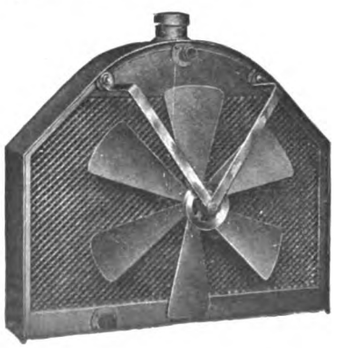
Exhibited at New York Show, Spaces 42-44, First Tier Boxes.



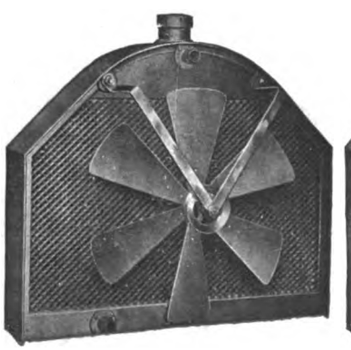


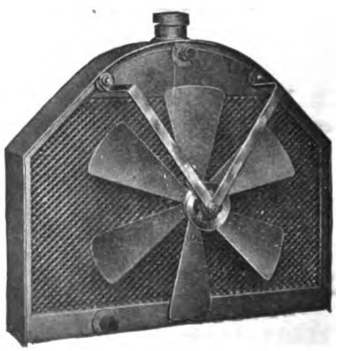
The WHITLOCK COIL PIPE CO.

Hartford, Connecticut.









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The Tire of the Season

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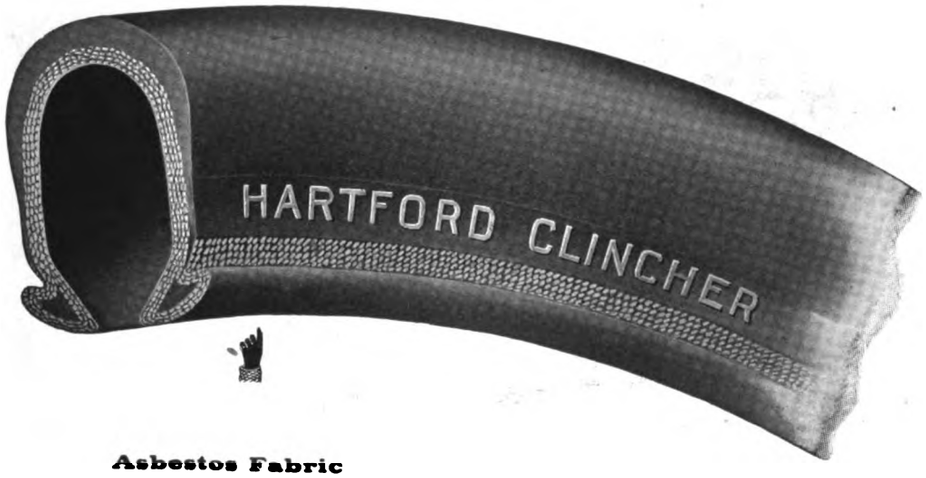
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Prevents Rim Cutting
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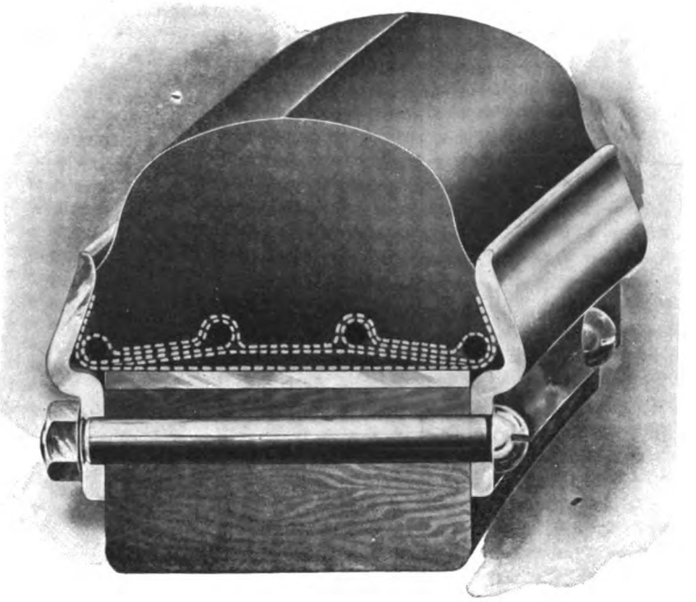
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THE TURNER ENDLESS SOLID TIRE

to be the only successful tire for commercial vehicles.

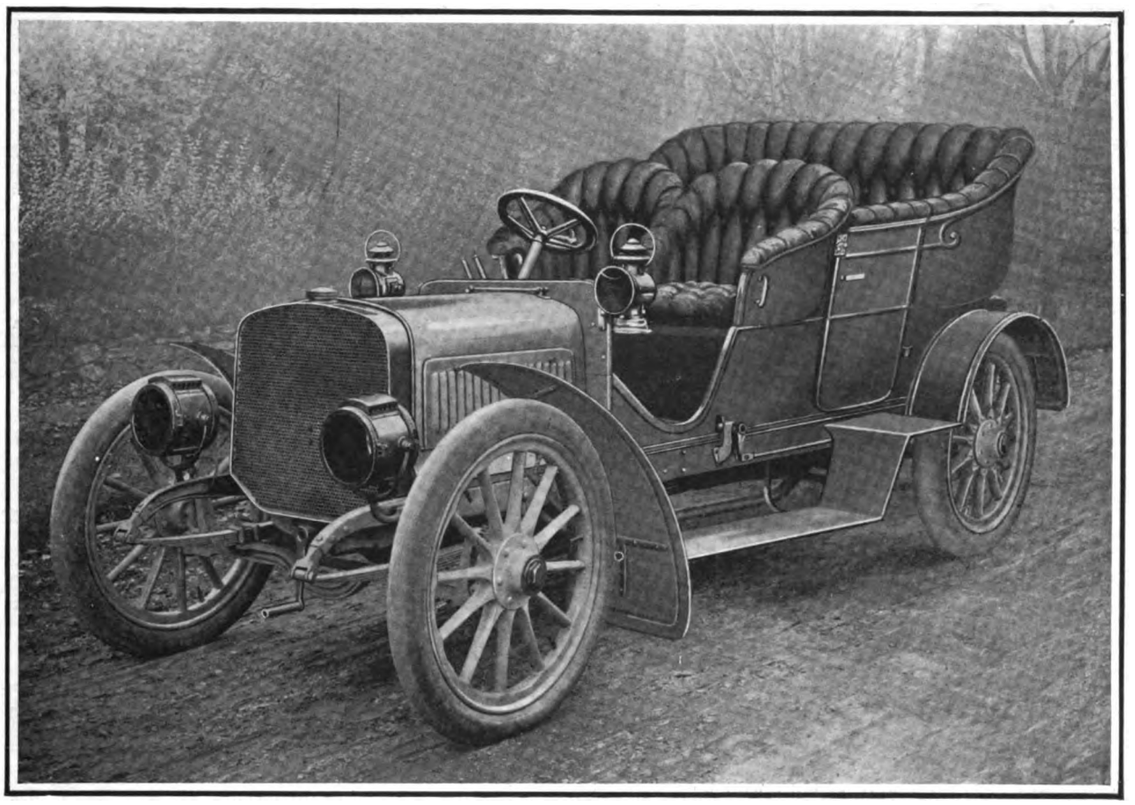
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THE LOZIER MOTOR CAR, 30-35 HORSE-POWER.

EMBODIES the best elements of construction known to modern automobile engineering—Absolutely high grade—The four cycle, four-cylinder, vertical type motor, being a "Lozier," carries with it every assurance of perfection—Absolutely automatic carburetor—115 1-2-inch wheel base—36-inch wheels—4 1-2-inch tires—Double chain drive—Double side entrance. aluminum tonneau—Large seating capacity—Handsomely finished. Price, $5,000 and upward, according to style of body.

CATALOGUE READY IN A DAY OR TWO. Send for a Copy, or ask us for one at the Madison Square Garden Show.

Motor Boat Agents are requested to write us for our motor boat discounts.

The Lozier Motor Co., New York City.

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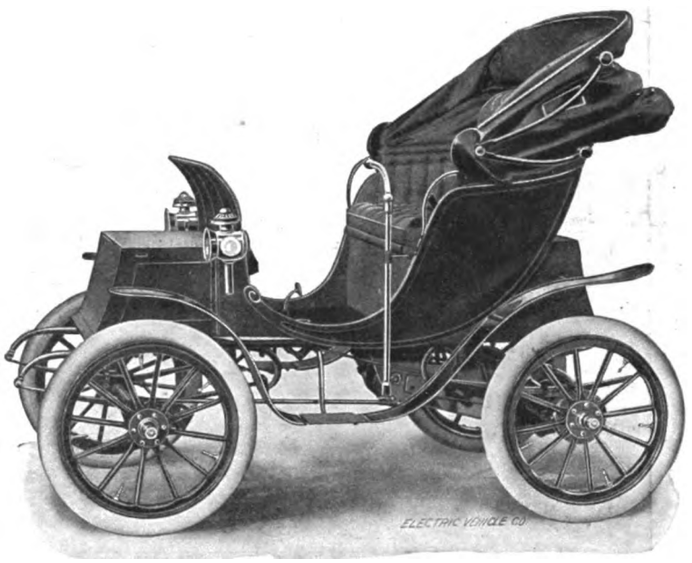
Columbia ELECTRIC

Mark XLI is an entirely new electric light, fast, of wide radius of action, luxurious in comforts, artistic in design and elegant in appointments and finish. It is the most resourceful light electric carriage yet built. Leading constructive features are steel chassis, single motor, chain drive, side lever steer, new and simple controller, with three speeds forward and two reverse, and equal division of battery weight over both axles.

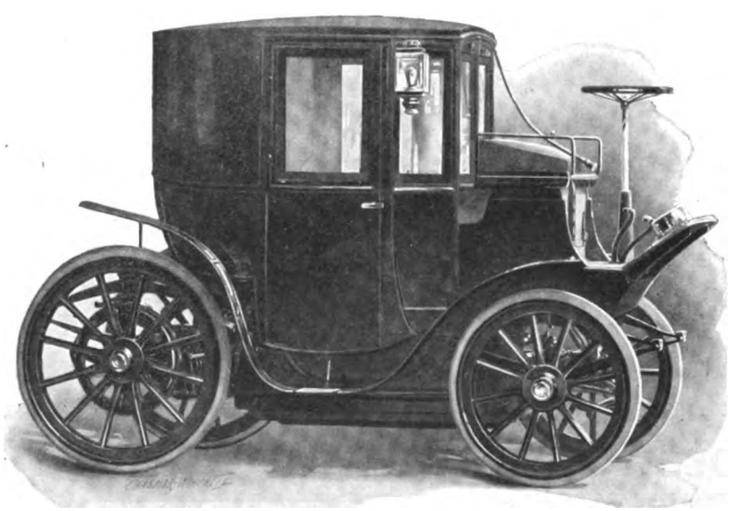
The body follows the most approved Victoria lines with swing panels, and allows for ample seat room and harmonious battery disposition. The hand-buffed leather hood is perfectly fitted and lined with the finest broadcloth.

Mark LXI realizes an ideal vehicle for town and suburban use where a 15-mile speed is sufficient, and is high in favor with physicians, ladies, and others who find electric power best for their requirements.

Supplied standard in green and royal blue, with upholstering to match.



Mark LXI. Victoria-Phaeton, $1,850.



The new electric light runabout, mark LX, is the fastest, most efficient, and widest in range of single battery charge of any electric carriage of similar weight. Exclusive of the body it is the same car as the Victoria phaeton, and a season's popularity and successful use attests its many qualities of automobile worth.

Price, $900.

Columbia Town Carriages

Columbia supremacy in the building of Electric Town Carriages for private service—Broughams, Landaus, Landaulets, Hansoms and Rear Boot Victorias—is universally conceded. Perfect in design and equipped with every possible device that can add to the comfort of the occupants, these vehicles are the vogue with New York society people and are extensively used in other large cities. They have many important electric and mechanical features, found in carriages of no other make, which are the result of our years of experience in providing for the requirements of purchasers who demand the very best of everything that pertains to vehicles or their use.

The leading position of Columbia electric commercial vehicles—light and heavy electric delivery wagons and trucks—is equally well established.

Separate Catalogue of Columbia Electric Carriages and Columbia Electric Commercial Vehicles will be sent on request.

ELECTRIC VEHICLE CO.

HARTFORD, CONN.

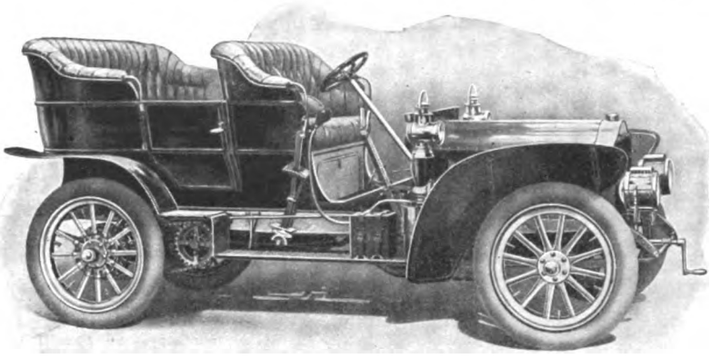
NEW YORK: 134-136-138 West 39th Street. BOSTON, 74 Stanhope Street. CHICAGO, 1413 Michigan Avenue.

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Columbia GASOLENE

The new four-cylinder 35-40 h. p. Columbia, Mark XLV, perpetuates the main features which placed its predecessor, Mark XLII, first among American cars, and incorporates such changes in details as have been suggested by a year's use. Most important among these is a new carburetter of the aspirating type, which represents the very latest and best practice and gives material increase of power. Another new and important feature is the spark and throttle control, by means of two levers so mounted on a revolving head within the steering wheel as to insure great delicacy of adjustment. The new pedals operating the clutch and foot brake are much larger than formerly, while the hand brake and speed changing levers are of new and greatly improved design. Added convenience in operation is secured by a dash-mounted mixture changing lever; compression releasing rod extending through both the cooler and the dash, so that it can be worked from either end; oiler driven by flexible shaft, replacing belts; and folding side-opening bonnet, arranged to open from either side and also bodily removable, and fenders which can be instantly taken off for close motor inspection.

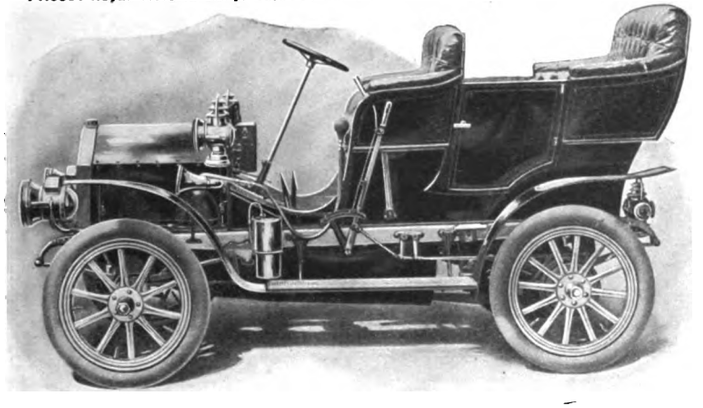


Mark XLV., 4 Cylinder, 35-40 h. p. Price, $4,000.

The standard side-entrance tonneau body with 108-inch wheel base is of an entirely new design, which we believe to be the best that can be devised for an open car with full width cross seat at the rear. The lower rearward curves harmonize perfectly with the general design, and have a tendency to deflect dust. The upholstering is of the richest and most enduring character. The body is painted dark green and the running gear yellow. Canopy or cape tops are supplied to order.

With the Mark XLV chassis, with the wheel base extended to 112 inches, we supply Royal Victoria, Landaulet and Limousine bodies. The Royal Victoria is ideally suited to park and boulevard driving, where speed is desired and a considerable distance is to be traveled. It is also a delightful touring car. The Landaulet and Limousine bodies meet every requirement for winter use and inclement weather touring. On these cars the style and color of the painting and trimming are at the purchaser's option.

Prices: Royal Victoria Body, $5,000; Landaulet and Limousine Bodies, $5,500.



SPECIAL BODIES
2 Opposed-Cylinder 18 h.p.

Mark XLIV. made its first public appearance as a class winner in the Eagle Rock Climbing Contest Thanksgiving Day. It has a double horizontal opposed 18 h. p. engine under forward bonnet, sliding gear transmission, propeller shaft drive, three forward and one reverse speeds operated by a single lever, automatic cylinder lubrication, standard spark plugs, foot-operated throttle, expanding metal to metal foot-operated clutch, hand and foot brakes, and spark advance lever in the steering wheel. The wheel base is 81½ inches. The luxurious side-entrance tonneau body is beautifully upholstered in dark green morocco. The entrances are broad and easy of access, and the car comfortably seats four persons. The body is painted dark green with gold striping, and the gear in long-wearing straw color. The long running boards have rubber, brass-bound treads. Equipment includes gas headlights, oil side and tail lights, horn and tools.

$1,750

Catalogue of Columbia Gasolene Cars will be sent on request.

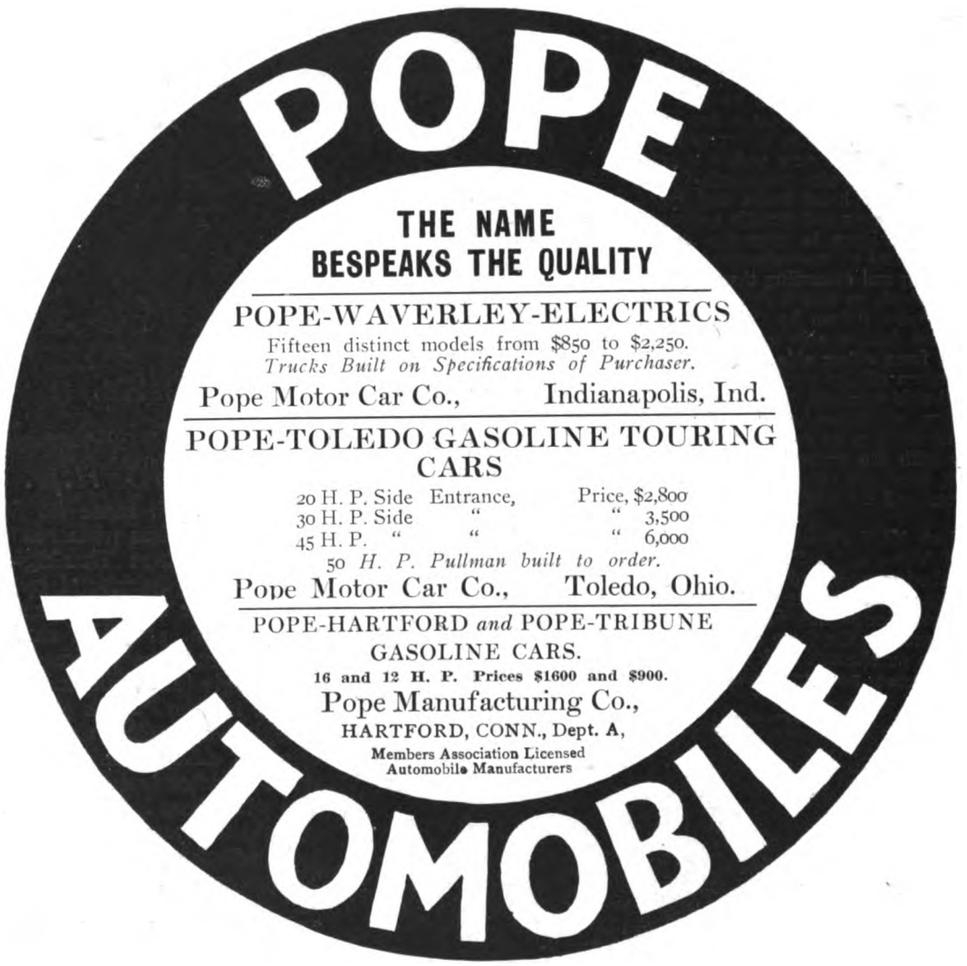
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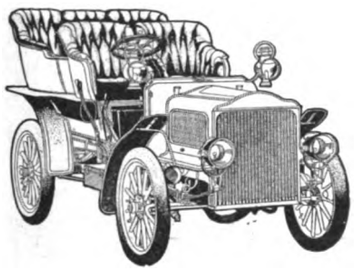
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The INCOMPARABLE WHITE

THE CAR FOR SERVICE



HE WHO IS WISE

Takes this factor into account when selecting a car: "Are the records to which attention is called in connection with each make, those of a single machine or of the cars of a single year; or, on the other hand, has this make of machine, from the first, made a consistent record for excellence?"

A systematic survey of the claims of various makes of cars discloses the unique position of the White. Since its first appearance, in 1901, it has consistently won first honors in *every* reliability test. The great collection of White trophies—first prizes in track races—bear the dates 1901, 1902, 1903 and 1904. Each year White owners have taken the longest, hardest tours.

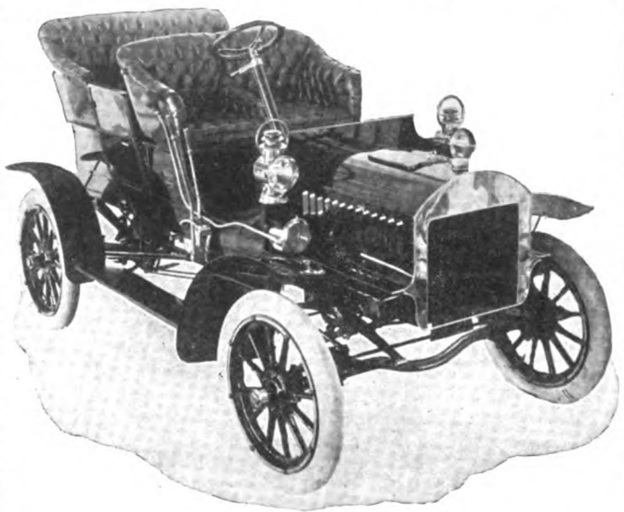
Have *you* made this all-important comparison?

Write to us for Literature which may help you decide.

WHITE SEWING MACHINE COMPANY,

CLEVELAND, OHIO.

The 1905 Logan.



20 H. P. 1620 Lbs.

SLIDING GEAR TRANSMISSION

(no gears in action on high—runs in oil—impossible to strip gears when shifting),

AND OUR

EQUALIZED SPRING TRUSSED FRAME

(which does away with all jolt and jar of a rough road),

ARE ONLY

Two Features of Many

THAT MAKE

The Logan

"THAT CAR OF QUALITY"

Price, $1600.

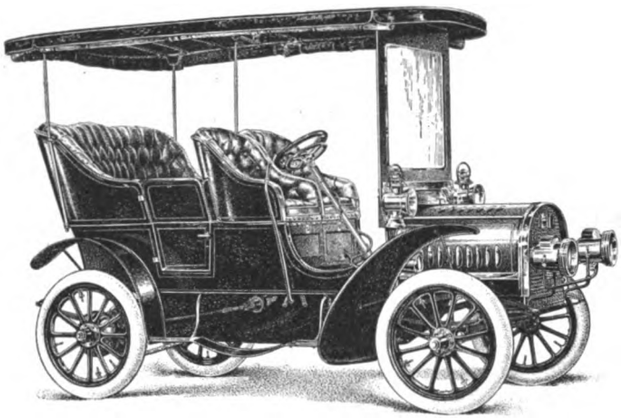
See us at New York Show, Space B.

Logan Construction Co.,

CHILLICOTHE, OHIO.

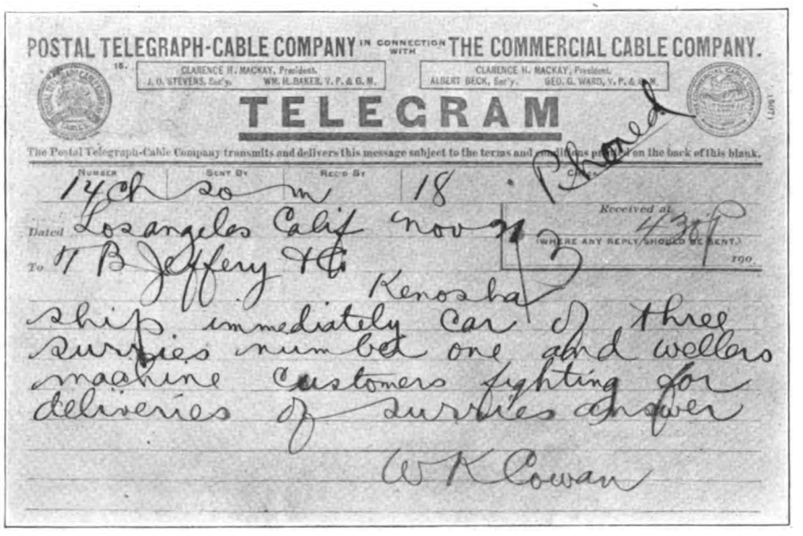
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COMPLETE WITH LAMPS, TOOLS, ETC. IMMEDIATE DELIVERY.



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Number 14 Ch Sent By 20 m Recd By 18 Rec'd

Dated Los angeles Calif nov 11 Received at 4.30 P

To W B Jeffery & Co (WHERE ANY REPLY SHOULD BE SENT.) 190

Kenosha

ship immediately car of three surries number one and wellers machine customers fighting for deliveries of surries answer

W K Cowan

The season in Los Angeles, San Francisco and other points on the Pacific Coast had advanced two months when this telegram was sent and constant use had developed enthusiastic admiration of the vehicle. What has happened, will happen again—and in your city.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, January 12, 1905. No. 16

PANHARD CRIES "ENOUGH!"

Famous French Firm Withdraws Opposition to Selden Patent and Injunction is Entered.

There was a considerable fluttering on the top floor of Macy's dry goods store on Tuesda night; in fact, even the lights flickered ominously. It was the night that that collection of some fifty foreign cars, most of them 1904 models, which is denominated "importers' saloon," was exposed to private view. At about the same time that the band was blaring, news reached the roof of the drygoods store that one of the most important of the foreign manufacturers, Panhard & Levassor and A. Massenat, their representative in this country, had "struck their colors" and surrendered to the Association of Licensed Automobile Manufacturers, or, in other words, had acknowledged the validity of the Selden patent and discontinued legal opposition. It was not news of a nature to cause the spirits of most of those interested in the "saloon" to bubble.

Panhard & Levassor's capitulation is complete. They not only recognize the validity of the Selden patent, but agree that judgment and an injunction against them shall be issued. The settlement, of course, carries with it adjustment of back royalties and payments on future importations.

The suit which, as usual, was brought in the name of the Electric Vehicle Co., was filed December 28, 1903. In their reply, the Panhard attorneys caused some little comment by citing patent No. 493,082, of March 7, 1893, granted Clarence Gillette, Gloversville, N. Y., which applies to a "new and improved road wagon," adapted to use "steam, compressed air, electricity, etc."

The settlement of the suit naturally has caused elation in the Association of Licensed Automobile Manufacturers, particularly as Panhard's surrender was made in the face of the Gillette patent and despite the fact, they say, that all the testimony in the Ford case was placed at the disposal of the Panhard counsel.

Flare-up Expected in Fredonia.

Interesting and perhaps sensational developments are looked for next week, when, on January 17, at Youngstown, Ohio, the creditors of the bankrupt Fredonia Mfg. Co. hold their first meeting. The hearing will reveal a condition of affairs unexpected and extremely discouraging for the creditors, according to Referee W. C. McKain, who last week issued the necessary notice for the meeting.

Receiver McKain reports that the books show that there are 325 creditors of the company, and that the total liabilities are $72,500. The total assets consist of $3,185 in the hands of the State receiver and three unfinished automobiles and seven unfinished carriages, upon which there are chattel mortgages to the amount of $3,300. It now develops that one year before the Fredonia company made an assignment it sold all its real estate to Mrs. Mary A. Smith for $20,000 in cash and $16,000 in mortgages. The deed of this sale was not offered for record until the day before application was made for a receiver.

Westinghouse to Build Cars?

Pittsburg advices state on alleged "good authority" that the Westinghouse interests will in the near future install an automobile factory in the plants at East Pittsburg.

It is added that the first two cars built in the Westinghouse's French factory recently arrived in Pittsburg and are at present stored in the garage of George Westinghouse at his residence on Homewood avenue.

Bowman Reads the Writing on the Wall.

Sidney B. Bowman, who long has been one of the most vehement shouters regarding the superiority of foreign cars, has seen the great white light that gradually is breaking on the handlers of the imported product. Through H. J. Koehler, the S. B. Bowman Automobile Co. has just secured the New York agency for the Buick car.

Panhard to Form American Company.

Concurrent with their settlement with the Association of Licensed Automobile Manufacturers, it is authoritatively stated that Panhard & Levassor will incorporate an American company.

NEW SHOW DEAL

End of Triple Alliance Brings Matters to a Climax—Licensed Manufacturers Likely to Secure Lease of Garden.

It is almost beyond peradventure that the show which will be inaugurated in Madison Square Garden, New York, on Saturday night will be the last one conducted by the triple alliance—the National Association of Automobile Manufacturers, the Automobile Club of America and the Madison Square Garden Co.

The contract which bound them together for a period of three years will then terminate. It is not likely to be renewed; indeed, before the show will have closed on the Saturday following it is almost certain that the situation that will develop will be akin to the explosion of a dynamite bomb thrown into the very centre of the trade.

Certain surface indications are pointing with no uncertain finger to the Association of Licensed Automobile Manufacturers as the most likely sponsor of the show of 1905.

While confirmation of the statement is not possible, that it is well founded the developments of the next few days are more than apt to prove.

It is understood that the A. L. A. M. will ally itself with no other organization; it will conduct its show unaided and, according to one story, without cost to its members. Of course, if the deal is consummated—if it has not already been consummated—it will mean that only steamers, electrics and licensed gasolene cars will be exhibited in Madison Square Garden next year, and possibly for a term of years.

That such a result will cause a widespread sensation goes without saying, and that it will affect several of the meetings that are due to occur next week is as undoubted. It will cause an entire rearrangement of show affairs.

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POPE FILES FIRST REPORT

Shows a Fair Profit and a Healthy and Encouraging State of Affairs.

According to its annual statement, made public this week, the Pope Manufacturing Co., in its first year of existence, was successful in earning a fair profit, while its predecessor, the American Bicycle Co., never was able to keep from sinking deeper in the financial mire.

The Pope year ended July 31, 1904, the balance sheet showing a profit of nearly $51,000. The income account is as follows:

Gross earnings	$7,226,589
Expenses and cost	5,995,793
Net earnings	,230,796
Other income	62,158
Total income	1,292,954
General expenses and interest	1,241,961
Balance net earnings	50,992

The balance sheet, dated July 31, 1904, follows:

Cost of properties	$18,523,632
Expended during year	392,270
Properties not used	538,008
Other capital expenditures	297,166
Inventories (at or below cost)	3,111,398
Accounts receivable	734,904
Bills receivable	98,154
Miscellaneous investments	126,330
Cash	283,[illegible]
Total assets	24,104,965
First preferred stock	2,500,000
Second preferred stock	10,000,000
Common stock	10,000,000
Stock Federal Co. outstanding	105,600
Bankers' loans	1,095,000
Accounts payable	310,054
Payrolls accrued	43,317
Surplus	50,992
Total liabilities	24,104,965

Commenting on the report, a director of the company says:

"We are very well pleased with the result of our last year's business.

"The company has a surplus of quick assets over liabilities of $3,000,000. As there is only $2,400,000 of first preferred stock issued which represents the money paid in at the time of the reorganization, the quick assets not only represent 100 cents on the dollar for the first preferred stock, but $600,000 in addition. The auditors, Jones, Caesar & Co., of New York, have marked down all the fixed asests to a very low valuation, yet their figures show real estate and plants amounting to $4,700,000, which, with the $600,000 above mentioned, gives an actual cash valuation to the second preferred stock of over $50 per share, and good will, patents, licenses, trade marks, etc., represent the balance.

"The year just ended was the first year of the new company, and, as is necessary in such cases, a great deal of time and money was spent in readjusting and organizing the business, replacing bicycle machinery with automobile machinery, etc. The most gratifying feature of the report is that the automobile business showed a handsome profit.

"The bicycle business is only susceptible of a fixed amount of sales, regardless of the amount of money spent in advertising, and this department has now been so organized that only such plant capacity will be devoted to that department as is necessary to supply the natural demand for bicycles, and that department this year should show a fair manufacturing profit.

"The number of bicycles sold last year was about 89,000. The number of automobiles sold were about 300 Pope-Hartfords and Pope-Tribunes, 569 Pope-Toledos and 355 Waverly electrics. A great many more Toledo cars could have been sold, but plans had originally been made to make 500, and by putting on a night force 569 were finally finished.

"The following statement of December 1 shows a most interesting comparison for the business of four months of this year, August 1 to December 1. The company has sold in that period 16,000 bicycles, against 12,000 last year, and has on hand unfilled orders for 22,000, against 14,000 last year.

"The company has sold and delivered 149 gasolene automobiles, against 90 last year, and has on hand unfilled orders for 501 gasolene cars, against only 3 last year. It has sold and delivered 115 electric automobiles, against 500 last year, and it is believed that filled orders for 38, as against 19 last year.

"The Toledo factory report for the month of December shows orders received for 172 more cars during December, making total orders received for the five months of 706 Pope-Toledo automobiles.

"This year double the last year's product has been put in the factory, viz., 1,000 cars, against 56 last year, and has on hand unafter the New York and Boston automobile shows the entire product for the year will be sold."

Stimulating Electrics in the West.

A notable addition to Milwaukee's retail contingent is the Electric Vehicle and Supply Co., which was incorporated a short time ago with $25,000 capital. A new building at Third and Wells streets has been secured and fitted up with charging outfits and other paraphernalia. The Studebaker and other lines of electric vehicles will be handled.

It is the intention of the concern to establish charging stations at various points throughout the State. Eight of these have already been opened on the road to Chicago.

Brokaw in Selden Net.

W. Gould Brokaw, the New York millionaire, has been added to the list of those who must prove that they are not using imported cars in violation of the Selden rights. He was served with the necessary papers on the 3rd inst., and has since been chirping about forming a syndicate to fight the case.

To Enlarge Lamp Factory.

So greatly has its business of making automobile lamps increased that the James W. Brown Mfg. Co., of Columbus, O., will at once begin the enlargement of its plant. When this is completed, the capacity will be materially enlarged.

TIRE FACTORY FOR DETROIT

Big Rubber Company Secures Option on Site and May Build Plant There.

It is not improbable that the Rubber Goods Mfg. Co. will establish a tire manufacturing plant in Detroit. The recent visit of Charles H. Dale, president of the company, to that bustling automobile centre gave rise to the report, and on Tuesday, after his return to his New York office, Mr. Dale admitted that the report did not lack substance. To a Motor World man he stated that while in Detroit he had met a number of representative men identified with the automobile industry, and, after viewing the field, had obtained a ninety days' option on a desirable factory site. Whether or not a plant will be erected will be officially decided within that period.

Mr. Dale also confirmed the report the Rubber Goods factory at New Brunswick, N. J., heretofore operated by the India Rubber Co., had been taken over by the Hartford Rubber Works Co., and will be used in adding to the production of perfected Dunlop tires. He was plainly very proud of the success of the new tire.

He said that the company decided last winter that this tire was built on the right principle, and that, after thoroughly testing he method of attachment under all sorts and conditions of usage, they decided to make it the leading production of the Hartford Rubber Works, but that they never anticipated the immense demand for the Dunlop tire so early in the season. It was the orders in hand that impelled them to take over the New Brunswick, N. J., plant.

During the last month this factory has been thoroughly overhauled and put in excellent condition for the manufacture of Dunlop tires. In a short time it is estimated that, with the immense facilities at the command of the Hartford Rubber Works Co., they will be able to turn out one thousand tires a day. In furthering their campaign the Hartford people have made an unusual departure by purchasing outright some ten automobiles, which are being used by their own men in demonstrating the Dunlop. One car, representing the product of the nearest manufacturer, is attached to each branch, and radiates therefrom.

Will Retail Now, Manufacture Later.

It is the purpose of the newly formed Evans Automobile Co., of Columbus, O., to eventually embark upon the manufacture of automobiles. For the present, however, only a retail business, including a garage, will be conducted. The concern's capital is $30,000, and it organized by electing these officers: J. Cyrus Morrison, president; Smiley Caldwell, vice-president; George W. Smith, secretary; Charles E. Leist, treasurer, and William E. Evans, general manager. Quarters at 63 East Gay street have been leased.

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LOOKS LIKE A LOAN EXHIBIT

Fifty Cars, Chiefly Old Models, Constitute a "Salon"—One Lonely American There.

What is officially styled the "Importers' Salon," but what is in fact a display of about fifty foreign cars, most of them 1904 models, suggesting a loan exhibit, was formally inaugurated last night. It occupies the top floor of Macy's bargain drygoods store, Thirty-fourth street and Broadway, New York.

It was informally opened the night before, Tuesday, at which time the vulgar throng was denied admission, and only those who had received invitations attended. According to the press agent, Senator Chauncey M. Depew would deliver the "inaugural address" at that time and press a button that would shed electric light on the subjects displayed. But the Senator was conspicuous by his absence. The speechmaking and button pressing were performed by the versatile and obliging Winthrop E. Scarritt. The press agent had also heralded that the Ambassadors of France, Germany, Italy and a few other places would come on from Washington and beam on the crowd of Americans whom the importers hope to separate from their dollars. If the ambassadors had agreed to do anything of the sort, they failed ignobly. Instead of coming themselves they sent certain of their understudies, who beamed as well as they knew how.

As of the gilded brick, it must be said that the decorations are pretty and in good taste. The prevailing tint is green, the signs over each booth are of this color and, with the "impressive" display of 1904 cars, coupled with the odor and close proximity of the bargain counter, suggest that green was selected in the hope that it might find lodgement in the American eye. As a side show there is an alleged Japanese "tea garden," which fills a lot of space which otherwise would have been filled chiefly with echoes.

The preponderance of 1904 models makes evident that the "salon," or "saloon," as nearly everyone laughingly dubs it, holds little that is new or novel or instructive. Three American cars, Franklins, are included in the collection. Their display is in violation of the N. A. A. M. agreement, but one of the Franklin local representatives, bearing the American name Comancho, talks airily of the violation and asserts that as Franklin could not obtain all the space at Madison Square Garden that was asked for, he is justified in getting it elsewhere.

There are ten or twelve accessory firms—chiefly handlers of foreign wares—displaying their goods. And, oh! yes, the Macy dry goods store is very naturally occupying the most generous space, and, of course, showing some of the garments that are daily displayed on the bargain counters of the lower floors of the same building.

Cadillac Makes an Acquisition.

What is substantially a consolidation of two Detroit concerns that have been so closely linked as to have been almost one has been effected by the merging of the Leland & Faulconer Mfg. Co. into the Cadillac Automobile Co. For three years the former have been making the Cadillac engines. Under the new order of things Henry M. Leland becomes general manager of the Cadillac Co., and Wilfred C. Leland, assistant treasurer.

It is a jointure that means much to all concerned, Henry M. Leland's reputation as a thinker and designer being of the highest order. For nearly forty years he has been at the head of large manufacturing institutions, seventeen of them being spent with Brown & Sharpe. Twenty years ago he located in Detroit and founded the Leland & Faulconer Co. Since then his mechanical genius has had free scope and has been used to the fullest advantage. The fine tools and machinery that he has evolved and the fine goods produced have served to keep his fame secure. One of the most notable of his comparatively recent creations was the machinery for cutting bevel gears for bicycles, previously considered an impossibility.

Still Fighting Bankruptcy.

A severe setback was received this week by the stockholders of the embarrassed Chicago Motor Vehicle Co., of Harvey, Ill., who are seeking to have the resumption of operations made possible. Judge Kohlsaat, sitting in the United States District Court, declared the concern bankrupt. This will not be accepted as final, however. An appeal taken from Judge Kohlsaat's decision will continue the fight until next October, when the United States Circuit Court of Appeals will hold a session.

It was given out that the liabilities consist of $60,000 worth of merchandise claims, $8,000 labor claims and $150,000 mortgages on the company's plant at Harvey, Ill.

Matheson Will Build in Spring.

The Matheson Motor Car Co., Holyoke, Mass., which has bought a five-acre site on the Grand Boulevard, Detroit, is to erect its new factory on that site in the spring. Pending its completion, the company has opened a Detroit office at No. 910 Hammond Building, in charge of F. A. Hinchman, of Detroit, who has recently been elected treasurer of the company, and F. F. Matheson, secretary. The company's main office will continue at Holyoke, Mass., until the plant is removed to Detroit.

Wolverine to Come East.

Land comprising one and one-half acres at Suffren, N. Y., has been purchased by President Charles L. Snyder of the Wolverine Motor Works, Grand Rapids, Mich. The property will, it is stated, be used for the erection of a plant for the manufacture of automobiles, to be begun in the spring. When completed the concern will remove from Grand Rapids and begin operations at the new plant.

TREATY OF PEACE SIGNED

Kansas City's Warring Dealers Bury their Hammers and Agree on Rates.

Kansas City, Jan. 6.—In Kansas City peace reigns once more. Although it may not be generally known, peace has not always reigned here; indeed, until Friday last, the dealers were at each other's throats. It was one of the very few places in the country in which prices of every nature were being slashed to the quick.

How much longer the war would have waged had not C. A. Wardle, the travelling emissary of the Association of Licensed Automobile Manufacturers, appeared on the scene is a matter of conjecture. Wardle's duty is to keep his eye on such disturbed centres, and although the embattled dealers did not know it when he arrived, he carried with him a sprig of olive and a vial of troubled-water oil. But when he waved the sprig, hands that clutched throats released their grips, and then Wardle had a chance to point out to them the folly of it all and the benefits of the get-together spirit.

This accomplished, he had the former warriors meet at the festal board in the Baltimore Hotel last night, and there, under mellowing influences, Wardle unbottled his famous fluid, and in no time at all the licensed dealers and the independent ones, all of whom had gathered, permitted the dove of peace to perch over them. They quickly saw that improvement in their respective businesses was impossible under the conditions that had prevailed, and were not slow to reach a mutually satisfactory agreement. It assures a wholesome order of things in the future, assurance which will be further strengthened by the formation of the Automobile Trade Club of Kansas City, which it was decided to formally organize on the 14th inst.

In addition to Wardle, those present at last night's meeting were as follows: E. P. Moriarty, of E. P. Moriarty & Co.; Henry C. Merrill, of the Kansas City Automobile Co.; Fred Patee, of the Cadillac Co.; J. O'Mara, of O'Mara & Ledwidge Automobile Co.; E. Richter, of Richter Bros.; G. J. Ferguson, of the Ferguson Implement Co.; F. D. McMillen, of the Western Automobile Co.; Karsher & Greenlease, P. A. Pollock, of the Belmont Automobile & Cycle Co., and E. Caps, of Caps Bros. Mfg. Co.

The agreement entered into, which probably will prove of interest and instruction elsewhere, is as follows:

Not to sell any new automobiles of current year's model at less than list price, F. O. B. factory.

Not to allow more than the folowing on any second hand automobile taken in trade, viz.: 1904 models, 60 per cent of list price; 1903 models, 50 per cent of list price; 1902 models, 40 per cent of list price.

All supplies and tires to be sold at catalogue prices, no supplies and tires to be

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purchased of any supply house which sells direct to users at less than standard list prices.

No commission on sales to be allowed to chauffeurs or to anyone not an authorized salesman.

Livery rates.—Not less than $4 for the first hour, and $3 per hour each hour after the first for each automobile rented.

A charge of not less than 60 cents per hour to be made for all repairs including punctures.

Storage.—The charges for storage to be as follows, viz.: $20 per month for 5-passenger cars; $15 per month for small 4-passenger cars, under $1500 in price; $12.50 per month for runabouts; $17.50 per month for large 4-passenger cars. Delivery to be $2.50 extra per month or 30 cents for single deliveries.

Gasolene to be charged for at the rate of 20 cents per gallon. Cylinder oils to be not less than 75 cents per gallon. Lubricating oils to be not less than 50 cents per gallon. Washing and polishing, $1 per car. Towing to be $2 per hour, or any fraction thereof.

Iowa Retailers to Incorporate.

Incorporation papers are being prepared for the Davenport Automobile Co., of Davenport, Ia., with a capital of $10,000, and will be filed at once. The principals are F. L. Bills and P. C. Peterson, the latter a practical automobile man. The firm of Stottenberg & Reimers, automobile dealers, have been bought out by Bills and Peterson, and their quarters at 115 and 117 Harrison street taken possession of. Arrangements have been made to handle the Northern car.

Sweden Orders a Carload.

The receipt of a carload order for Michigan cars from Sweden is reported by the Michigan Automobile Co., Kalamazoo, Mich. Their Model D car was the one selected by their foreign customer. The Michigan people have recently made a shipment of the same style of machine to Wellington, New Zealand, and say that foreign inquiry is showing a very marked increase.

Mead to Make a Change.

It is proposed to reorganize the Mead Cycle Co., of Chicago, which has been dabbling in the automobile business for a year or more. The plan is to style the new company the Mead Motor Co., and to make George S. Lewis president. The present premises at Nos. 1,243-45 Wabash avenue will be retained.

Waite to Join Royalty.

George S. Waite, manager of the Cleveland branch of the White Sewing Machine Co., has resigned that position to connect himself with E. Shriver Reese in the sale of Royal cars. Waite was with the White Co. for a number of years, and is well known in the trade.

The New York agency of the Matheson touring car has been placed with Shepard Bros., 500 Fifth avenue.

DAIMLER DROPS WAGONS

Peculiar Reasons that Brought About the Decision —Will Now Build Touring Cars Only.

In discontinuing the manufacture of commercial vehicles to devote themselves wholly to the production of the American Mercedes touring car, the Daimler Mfg. Co. has exactly reversed its policy. The reason for this radical action is uncommonly interesting and, while not unusual, is rarely permitted to enter into discussions bearing on business vehicles. It is the old question of not only obtaining but of retaining competent drivers.

C. M. Bouggy, president of the Daimler Company, says that, as usual nearly all the Daimler wagons were sold in or near large cities, and that it was the invariable experience of the purchaser that as soon as a young man had been properly broken in to drive the machine, he forsook his "job" for the more congenial employment of a chauffeur or demonstrator. As the owners of the vehicles could not afford to maintain training schools for private owners and garage keepers, it became apparent that, until equilibrium between supply and demand should be reached in the chauffeur market, it would be impossible to give the business vehicle a fair test on its own merits as a money saver.

The Week's Incorporations.

New York, N. Y.—Diamond Rubber Co., under New York laws, with $10,000 capital. Directors—T. B. Smith, E. B. Root and J. W. Ingram.

Milwaukee, Wis.—Franklin Automobile Co., under Wisconsin laws, with $5,000 capital. Incorporators—Henry W. Ramien, H. L. Ramien and Richard B. Ramien.

Brooklyn, N. Y.—The Rockliff Motor Truck Co., under New York laws, with $50,000 capital. Directors—Sidney D. Van Wagner, Charles H. Patterson and Charles Rockliff.

Columbus, Ohio—Dayton Motor Car Co., under Ohio laws, with $50,000 capital. Incorporators—John W. Stoddard, John F. Campbell, William J. Jones and Harry Croninger.

New York, N. Y.—The Michelin Tire American Agency, Inc., under New York laws, with $35,000 capital. Directors—Eben D. Winans, George W. Wilder and Charles D. Wilder, New York.

Columbus, Ohio—The Evans Automobile Co., under Ohio laws, with $30,000 capital. Incorporators—G. W. Smith, W. E. Evans, Smiley Caldwell, J. C. Morrison and Charles E. Leist.

Milwaukee, Wis.—Orlando F. Weber Co., under Wisconsin laws, with $80,000 capital; to manufacture automobiles and parts. Incorporators—Orlando F. Weber, Alfred Recke and A. F. Solliday.

Reading, Pa.—Reading Automobile Co., under Pennsylvania laws, with $20,000 capital, to manufacture automobile specialties. Incorporators—Harry O. Koller, James O. Koller and James Rick.

Milwaukee, Wis.—Middleton Mfg. Co., under Wisconsin laws, with $200,000 capital; to manufacture automobiles and parts. Incorporators—William C. Middleton, Frederick S. Middleton and Albert S. Schrewe.

Springfield, Mass.—The Rubber Appliance Co., under Massachusetts laws, with $50,000, to manufacture a collapsible rubber wash basin for automobiles. Officers: President, S. J. Rosenfeld; secretary and treasurer, D. E. F. Radasch; directors, S. J. Rosenfeld, D. E. F. Radasch and Samuel McWhorter.

Eisenhuth Effects Reorganization.

Plans looking to a reorganization of the Eisenhuth Horseless Vehicle Co., of Middletown, Conn., were put into effect last week. As a result new officers and directors were elected as follows: President, I. E. Gates, New York; vice-president and general manager, G. T. Schull, Middletown; treasurer, Charles Babbadge, New York; assistant treasurer, Vaughn M. Coyne, New York; secretary, D. H. Hilton, New York; general superintendent, D. F. Graham, Middletown; superintendent, J. Unser, Middletown; sales manager, F. C. Carter, Middletown; directors, I. E. Gates, G. T. Schull, J. A. Hilton, D. H. Hilton, J. W. Eisenhuth and D. F. Graham.

The concern manufactured what was formerly termed the Graham-Fox car, fitted with a compound gasolene engine.

Fire Inspectors Prod Stearns.

Walter H. Stearns, of 154 East Fifty-seventh street, is the latest garage keeper to receive the attention of the Bureau of Combustibles of the New York Fire Department. Though it was at first reported that he had been conducting the establishment for over a year without a license, this turns out to be an error. Stearns had been an unwilling violator of some of the regulations for garages, but will have the necessary changes made in his premises at once. When this has been done he will be allowed to resume his business.

Chicago Concern Changes Name.

Hereafter the Automobile Exchange, No. 1,502 Michigan avenue, Chicago, will be known as the Holmes-Schmidt Motor Co. The officers are G. E. Holmes, president, and Otto B. Schmidt, secretary and treasurer. A number of changes are being made in the premises, among them being the transforming of the first floor into a garage and room for demonstrating cars. The salesroom and office will be on the second floor. The Ford is the concern's leader.

Hannan Takes on Michigans.

George E. Hannan, of No. 1445 Welton street, Denver, Colorado, has taken the agency for the Michigan light touring cars for the coming season. He is said to be the largest dealer in Denver, and had the agency for the Olds line last season.

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The Routing of a Bugaboo.

It was probably just as well that the use of gasoline was almost uniformly prohibited at the earlier exhibitions, as it is now, so that the cars could not be shown in operation. Otherwise most of the prospective buyers of cars would have been frightened off—the attendants would have suffered from cranial aches, simulating those of the morning after variety, and very likely the sheriff would have had to step in and levy on the exhibits to pay the hall rent. For, if there was one thing that early attempts produced in a superlative degree, that thing was noise combined with a generous measure of smell. No necessity then to look up and down the road to see if a car happened to be coming; they announced their approach from a distance, and a very general comment on the part of the uninitiated was "How do they stand the racket?" meaning the occupants, of course.

Each year has marked a decided improvement in the production of an increasingly efficient engine that will work silently. Once the mistaken idea of loss of power through muffling down the exhaust was relegated to the limbo that holds so many other exploded theories, more attention was paid to this important requisite of comfort, with the result that the average car to be seen at the shows doubtless could be run without discomfort to the spectators, who usually surround every exhibit so closely.

The bugaboo of earlier years where mufflers were concerned was "back pressure." Both the presence and effect of it were exaggerated to a great degree in the mind of the average engine builder of the time. There seemed to be no escaping the fact that a certain amount of power must be wasted between the cylinder and the air, until experiments were made with various types of mufflers that effectually silenced the exhaust, and it was found, as a surprise to many, that the loss of power was a negligible quantity.

The old pepper-box type was probably the first to meet with any general acceptation, but very shortly gave way to enclosed silencers employing variously arranged baffle plates, and this form has now been brought to a point of development where the need of further attention to the subject seems almost superfluous. Those old timers, in many instances, were little more than boxes, built with or without a theory as best suited their inventors, who were usually too busy in remedying other defects to regard comfort as an essential. And the majority of them overlooked the necessity of maintaining the aperture through which the expanding gases escaped of a uniform size of not less diameter than that of the exhaust opening itself. Hence the bugaboo of back pressure.

Once the exhaust was adequately silenced; other noises, hitherto unheard because drowned in the din of the former, impressed themselves on the improver, and it is not too much to say that what with the great advancement in the cutting of sprockets and chains, and the adoption of the shaft drive, these also have practically been eliminated.

Of course, there are still cars that go thumping along, and some of these were particularly noticeable during the past season, owing to the fact of their being so far in the minority. Then there are cars that hammer and pound, but that's another story and doesn't involve mufflers. It is safe to say there will be fewer noisy and ill-smelling cars running on our roads during the coming season than have ever graced them before in the history of the industry.

Handling Second-Hand Cars.

Like the bicycle industry when at the height of its prosperity, improvements in the automobile field have followed upon the heels of one another with such rapidity that the question of what to do with the second hand cars will soon become pressing. In the first stages of development changes were so radical that old models of motor cars, like the primitive forms of safeties, were forced into retirement by their very ungainliness as compared with the models that superseded them; few self-respecting men wished to be seen in public driving them. And, despite the fact that all motor cars begin to look more and more alike, and there is less difference between the models of each succeeding year, second hand cars grow amazingly in number, and the question of what to do with them comes with increasing force to an agent every time he has to dicker about taking a model of the previous year in trade.

Not that it is at all likely that this phase of the industry will ever reach a crisis similar to that solved by piano dealers during the last year by the cremation of about a thousand old squares which had been taken in trade no end of times. Though long past its youth, a piano may still live on to torture all who are compelled to endure it, but the average motor car will eliminate itself by reaching the junk pile through the ordinary processes of wear and tear long before reaching any such venerable age, so that a consideration of this side of the question is not called for.

On the other hand, the question of handling this constantly growing number of hand-me-downs, more or less of which must always be taken in trade by every agent, has assumed such proportions that one large dealer seriously contemplates the opening of a store under a totally different name, merely to take care of this influx. By this means nothing but the spick and span new models of the present generation will greet the intending purchaser's eye, and he will not be tempted to look for bargains. The second hand cars will be confined to another quarter entirely, apparently having no connection whatever with the first.

True, it will not be so easy to change the second hand buyer's intentions for the better so readily by finally persuading him to purchase a new car, where this method obtains, but the reverse of the proposition holds true,

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and the dealer in question rightly assumes that even where a prospective purchaser will have none but a used car, he will be positioned to direct him to the "very best place to obtain one."

It is certain, at any rate, that the display of a second hand car on a salesroom floor is frequently a distraction, and any means that lessens its influence is of real value and merits earnest consideration.

Lengthening of Wheel Bases.

Only a year ago there was a revulsion abroad against extremely long wheel bases. It was felt that the movement in that direction had been carried unduly far. Racing cars had been copied for touring models, with the result that the length of the latter approximated the former, and weak and sagging frames were the entirely unnecessary outcome.

To-day foreign wheel bases are as long as they were, and in this country longer. The side entrance body is chiefly responsible for this right about face. It has compelled a lengthening of the frame, and this necessity caused the ban on the practice to be withdrawn. Consequently designers have been given practically a free hand in the matter, and have availed themselves of it to a remarkable extent.

Looking over the leading 1905 models, as at the approaching shows, the observer will notice a number of cars having wheel bases of 100 inches and more. When it is recalled that only a year or two ago such bases as 60 and 70 inches were considered fairly long, and that only a short time before that the "dumpy" runabouts of unlamented memory were the vogue, the tremendous change that has been made will be apparent. The first steps toward longer chassis were taken in response to a demand for easier riding cars; this was still in evidence when tonneau cars became popular and made it desirable to place the axles still further apart. Then came the side entrance, and necessitated still another lengthening.

It is easy to see that these long wheel bases materially increase the car's liability to give trouble. This is, of course, well known to designers and builders, and they take what they deem to be sufficient precautions against sagging, twisting and buckling frames. It can be determined only by actual use whether they have done enough. They have to build strong and provide against the severest stresses and strains, and each time they lengthen the frame the problem of giving it strength to support the weight of engine, transmission, etc., becomes increasingly difficult. Whether it has been solved in all cases only the future can disclose.

At last it has been revealed why certain supersensitive motorists of Dorsetshire, England, objected to using license numbers bearing the initials "B. F." It will be recalled that a great hue and cry was raised about these initials a few weeks ago, letters were written to the Times, Parliament was petitioned to permit a change, and it was stated that many motorists of the shire were going into adjoining counties and buying their numbers, to the sore loss of the Dorsetshire treasury. Through it all, however, no mention was made of the reason for the dislike of the mystic letters "B. F." Now it appears that the average Britisher—whether of bucolic or urban origin—interprets these letters as meaning "bloody fool." It was made clear to us by an Englishman, and it seems that we are very dense not to have known that any motorist carrying a tag with "B. F." on his car would have "bloody fool" yelled after him! If it had been "D. F." now, we might have "tumbled."

It has a tendency to emphasize our immaturity to have it made known that, although automobiles are taxed 45 per cent by our beneficent government, the law under which this duty is levied does not contain the word "automobiles." The Dingley tariff was drawn in 1897, and at that time the motor vehicle, while made in small numbers, was quite unknown to our solons. Consequently when the first foreign car reached this country the customs authorities were much puzzled to know how to classify it. They finally hit upon "manufactures of metal" as being pretty close to what an automobile was, and as such manufactures were assessed 45 per cent ad valorum, it was decided to assess automobiles in this sum. The practice has, of course, continued ever since.

It is in no carping spirit that the suggestion is let fall that if, within two weeks, frost an inch deep does not fall on the top floor of Macy's drygoods store, in New York, it will be because that floor has lost its natural affinity for frost or because one of those whose fingers is deepest in the "salon" pie is an uncommonly able newspaper man attached to an uncommonly influential New York daily. To believe that the American public can be long hoodwinked into paying for the "privilege" of gazing upon a small assortment of foreign cars, chiefly 1904 models, such as have been shown in salesrooms during the last twelve months, is to fully believe Barnum's historic remark.

To put it mildly, those officers and members of the Automobile Club of America who permitted their names to be used as "patrons" of the "wildcat" or unsanctioned show now running on the top floor of Macy's drygoods store, in New York, did not display the best of good taste. Shorn of empty excuses, that display was designed to detract from the Madison Square Garden show, in the promotion of which the A. C. A. is a co-partner and from which it will derive a considerable revenue. To even passively join with those who would lessen its success is not playing fair or exhibiting that mutual co-operation and goodwill due from one partner to another.

The New York Herald is able to exist because of American manufacturers and merchants, but if it is a real friend of the American automobile industry, the fact has yet to be effectively demonstrated.

COMING EVENTS.

Jan. 11-15—New York, Importers' Show, Macy's Dry Goods Store, top floor.

Jan. 13—New York, Motor and Accessory Manufacturers, annual meeting, Hotel Astor.

Jan. 14-21—New York, National Show, Madison Square Garden.

Jan. 16—New York, American Automobile Association, annual meeting and election.

Jan. 19—New York, Superintendents' and Engineers' Branch of the Association of Licensed Automobile Manufacturers, meeting.

Jan. 20—New York, National Association of Automobile Manufacturers, smoker.

Jan. 21—New York, National Association of Automobile Manufacturers, annual meeting.

Jan. 21—New York, Automobile Club of America, annual banquet, Astor Gallery, Waldorf-Astoria.

Jan. 23-28—Ormond-Daytona, Fla., third annual speed carnival.

Jan. 23-28—Philadelphia, Automobile Show.

Feb. 4-11—Chicago, National Show, Coliseum.

Feb. 13-18—Detroit, Automobile Show.

Feb. 20-25—Cleveland, Automobile Show, Gray's Armory.

Feb. 27-March 4—Toronto, Automobile Show.

March 6-11—Buffalo, Automobile Show, Convention Hall.

March 13-18—Boston, Automobile Show, Mechanics' Hall.

March 13-18—Boston, Importers' Show, Symphony Hall.

March 27-April 5—Washington, Automobile Show.

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THE INDUSTRY IN DETROIT

Impressive Figures Showing How it Gradually has Expanded and the Volume Attained.

Some interesting figures regarding the growth of the automobile industry in Detroit were given out last week by John B. Howart, chairman of the Board of Commerce in that city. From one lone concern in 1901 with $500,000 capital, the industry has grown until during 1904 there were fifteen new companies incorporated, while the amount of invested capital had increased to more than $4,500,000. Mr. Howarth made public these facts in the course of an interview regarding the industrial development of the "City of the Straits," and his remarks concerning the automobile manufacturing business were as follows:

"Up to the end of 1901 this industry was represented in Detroit by a single company, with a capital of $500,000," he said. "In 1902 two other companies were incorporated, one with $300,000 and the other with $50,000 capital, making the total investment for use in Detroit $850,000. In 1903, by additions to the capital of old companies and the incorporations of new ones, this was increased to $2,200,000. During the year just closed fifteen new companies were incorporated, with authorized capital of over $2,000,000.

"As showing the progressive character of the industry, there was one company organized in February with subscribed capital of $75,000; lately it increased its capital stock to $400,000. Three other companies which began business within the year have already found it necessary to increase their capital.

"Aside from the companies engaged in the manufacturing or assembling of automobiles, there are three other large concerns and many smaller ones, whose industry is directed almost entirely to the manufacture of automobile engines and accesories. These concerns added not less than $500,000 to the capital actively employed in this industry, making a total of over $4,500,000 invested. Still another company, with a capital of $500,000, has purchased a site for a factory and is about to remove here from another city. The direct exports of automobiles from Detroit during 1904 were about $150,000.

"The automobile output is valued at not less than $10,000,000. The indirect exports by way of the Atlantic and Pacific seaboard were probably five times as much as the direct exports. Detroit automobiles have been sent to Mexico, South America, South Africa, New Zealand, Australia and Japan, to every country in Europe, to Turkey, Persia, India, Burmah and almost every country of Asia."

Edward Campbell will open a garage at Marion, Ind., and conduct sales and repair departments. He will handle the Winton car.

No Foreign Cars for Croker.

Whatever Major John M. Woodbury, the head of New York's Street Cleaning Department, may say derogatory to the American product in defending his purchase with the city's money of two foreign cars, his views are not shared by Edward Croker, Chief of the Fire Department. A Motor World man met the latter one day this week, and remarked Major Woodbury's opinion of American cars as quoted at length in last week's Motor World.

"Humph!" ejaculated Croker, and added: "Thinks American cars won't run, does he? Well, if he'll follow mine for a while, he may learn something about them."

As Chief Croker uses a big Columbia touring car in answering alarms, which require him to go everywhere and at high speed and at all hours, his opinion probably is worth a great deal more than that of the Street Cleaning Commissioner. At the time he delivered his all sufficient comment he was in the Electric Vehicle Co.'s New York depot, negotiating the purchase of two additional cars, which added emphasis to what he had said.

Will Give Away Automobiles.

There is small room for doubt but that the exhibit of Charles E. Miller, the well known supply man, will be a storm centre during the New York show. Without violation of the Selden rights, he has brought from France some fifty thousand automobiles, and these he purposes giving away during the week. The cars are of three models, two being types of touring cars and the third a racer. One of the touring cars and the racer are of golden finish, and blowing on the "tailboard" produces a shrill whistle; the other is of silver finish, and is mounted on a stickpin. Miller will occupy two spaces at the show, and as he himself expressed it, he "will give an imported automobile to all who find his exhibit on the top floor." His space there is rather small, and it was difficult to tell whether or not his remark was satirical.

Realizing that the little conceits make uncommonly effective souvenirs, when he placed his order, Miller did so conditional on no others being shipped to this country previous to February 1. Until then he will enjoy a "monopoly."

Boston Show Needs More Room.

The Boston show management is considering the advisability of renting Paul Revere Hall, so as to secure needed additional space. Mechanics' Hall, where the show is to be held in March, is more than twice the size of Symphony Hall, where the 1904 show was held, and it was thought that there would be more room than could be utilized. The demand for space still continues, however, hence the consideration given Paul Revere Hall. The latter is in the Mechanics' Building, but separate from the main exhibition hall.

VALUE OF GOOD LOCATION

Aptly Illustrated by the Sales of a New Store of a New Company.

"Talk about location! We've the best in the city. Already we have done enough business to pay our rent for a year, and we have scarcely got started," said R. G. Howell, who looks after the city sales for the Harrolds Motor Car Co., to a Motor World man one day this week.

"As an advertisement alone the store is almost worth the rent," he continued. "See our location; fronting on Broadway from Fifty-eighth to Fifty-ninth streets—no retail merchant in New York, except John Wanamaker, has an entire Broadway block—and also on Fifty-ninth street, facing the park. Columbus Circle is one of New York's centres now, and the number of people passing our store is immense. We have our big glass windows on both streets artistically lettered, which in themselves would prove a great attraction. With the Olds and Pierce cars behind them they compel people's attention.

"All this is from an advertising standpoint. In the way of selling and demonstrating it has equal or greater advantages. We are practically in the park. There is only one line of car tracks to cross and no streets to thread our way through, giving nervous passengers spasms. A hundred feet and we are away from clanging bells and trucks and teams of all sorts. Yes, sir; it has downtown beaten a mile, and we are thoroughly satisfied, both with the outlook and what we have done already."

Why American Cars are Preferred.

"Though English made cars still have a preferential tariff of 10 per cent over foreign made ones in New Zealand, yet motors of American make have a far better sale, for the simple reason that they are made for local requirements. A few days ago I asked a motoring friend why he did not purchase an English machine. His conclusive reply was, 'English and French machines don't track,'" says a correspondent writing from Timaru, New Zealand, to the Autocar. He also states that the wheel gauge in New Zealand is practically the same as in Australia and America, that is, from 58 to 62 inches. The worn wheel and horse tracks on a road are each about a foot wide, so he deems it unsafe to purchase a car with a gauge less than 54 inches. The correspondent also dwells upon the importance of having the engine built slightly higher than is done for other countries. The bad condition of the roads and the numerous small streams which have no bridges necessitate the parts affected by going through the water being set high.

Louis Ohnhaus, of Ft. Wayne, Ind., has disposed of his interest in the Randall Motor Co., of that city, and will open a salesroom and garage of his own.

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MORRISON AMID HIS CUPS.



A. E. MORRISON, OF BOSTON, AND HIS TROPHIES OF THE YEAR.

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The Show of American Achievement

The 1905 Exhibition in Madison Square Garden Will Demonstrate its Right to the Title—Four Cylinder Motors and Side Entrance Bodies the Most Conspicuous Foreshadows but the Improving Hand will be Apparent Everywhere.

At no previous show has there been such an outgiving of entirely new and of redesigned and reconstructed cars as will be submitted to public gaze on Saturday night. It is scarcely short of a revolution. Nothing more conclusively demonstrates the great strides that have been made by the industry or reveals more clearly that the point has at last been reached where no comparison with anything produced elsewhere need be feared. It is scarcely too much to say that there is no more to be learned from across the water designers; certainly it is not going too far to predict that hereafter American designers will impart as much as they absorb.

Comparing the show that opens Saturday night with its two predecessors at Madison Square Garden, one is led to characterize it as the show of achievement. It is quite fair to regard 1903 as the year of promise and 1904 as the year of progress. Reasoning along these lines, one is impelled, as already stated, to style 1905 as the year of achievement. Having evidently come to the conclusion that the public want cars with vertical engines in front under a hood, they have, after considerable experimentation, produced cars of this type in great numbers, and now present them in the confident expectation that they will "make good."

Of this large number of new models many, perhaps most, have already been described and illustrated in these columns. A few have managed to prevent the withdrawal of the veil of secrecy that has enveloped them during the period of experimentation, test and construction; but nearly all of them will make their first public appearance on Saturday night. The throngs that will assemble at the Garden will find on nearly every stand entirely new cars, not all of them, it should be stated, of the vertical cylinder engine-in-front type. The stands where new models do not appear will be few and far between, and even many of the old patterns have, while still retained, been subjected to a process of reconstruction that will materially alter them for the better.

Next to the rush to the four cylinder type of car, which is, of course, the most noteworthy feature of the day, the greatest attention is being given to body construction. It is remarkable how this has progressed within a year. On the eve of the 1904 show the tendency to give prominence to canopies and glass fronts was remarked in these columns. Faint signs of dissatisfaction with the rear entrance tonneau body was also noted at about the same time. When the show opened it was seen that canopies and glass fronts were even more predominant than had been expected. But of closed bodies and side entrance tonneaus or surreys there was, with two or three notable exceptions, absolutely no sign. The exceptions noted were objects of curiosity as well as admiration. But they were as oases in a desert, surrounded on all sides by open and rear entrance cars.

Even in advance of the opening of the present show it is known that the concerns that will fail to have a side entrance car for their leading models will be very few. In fact, side entrances will scarcely be a matter of discussion; they are accepted already as the "proper thing" without demur or objection. If the four cylinder car is not accepted with equal unanimity, it is because a very considerable section of the trade still holds aloof entirely from the movement or has retained its horizontal cylinder cars while at the same time bringing out a four cylinder model.

A few of these four cylinder models have already made their appearance. Among them are the Thomas, which has been marketed for a number of weeks. It displaces the three cylinder type sold last year, and at $3,000 has been recognized as marvellous value. At least one of the new Winton models—the 16 horsepower Model C, listing at $1,800—has been shown at the Winton agencies.

New four cylinder cars that will be shown for the first time, although they have already been described are the following: The 28—30 horsepower Cadillac, listing at $2,800; the 20 horsepower Ford, the price of which is $2,000; the 16—20 horsepower Autocar, at $2,000; the 18—20 horsepower Orient, at $2,250; the 28 horsepower Acme, at $2,750; the 20 horsepower Stevens-Duryea, at $2,500; the 28 horsepower Haynes, at $3,000, and the 30—35 horsepower Lozier, at $5,000. It is also known that there will be shown four cylinder cars of these makes: Studebaker, Corbin, Yale, Mitchell, Duquesne, Pungs-Finch, Covert, Wayne and a few others.

The conclusion that the horizontal type of engine has disappeared, which is apt to be drawn from the foregoing lengthy list, is, however, a mistaken one. Such concerns as Haynes-Apperson, Cadillac, Ford, Autocar and Stevens-Duryea are retaining their time tested models of the opposed type, while concerns that put out this type alone are the Olds, Elmore, Rambler, Pope-Hartford, Northern, Knox, Michigan, Buick and Maxwell, a very respectable list.

A novelty is the appearance of a six cylinder car, the Duquesne. It will make its debut on Saturday.

Although the four cylinder car may occupy the centre of the stage, it will not prove the "whole thing." Such two cylinder cars as the new Oldsmobile, the new Pope-Hartford and the Maxwell, listing at well under $2,000, are most attractive creations that really establish new standards of values.

There is this to be said of practically all of the American cars—each possesses an indi-

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viduality that is distinctly marked. There is no slavish design of body, no sameness in hoods or radiators. Each is sufficiently different from the other to render instant recognition possible.

Because the American engine maker and the American body builder have brought themselves abreast of their foreign competitors, it is not merely in engines and bodies that the improving hand has shown its strength. In frame construction, in carburetting devices and in ignition appurtenances will be found a number of marked developments.

In tires, the advance of the mechanically fastened types will be made apparent. If it may be said that there is any pronounced feature or development in this department of the trade, the mechanical fastening must of right be considered the most conspicuous.

Taken all in all, it will be seen that the show will contain much more of novelty than it has ever done. The upward tendency of both powers and prices, even as compared with last year, will be made plain. The extremes of price are between $375 and $7,500, which does not materially differ from the preceding show, but the average price is considerably higher.

The Exhibitors and their Exhibits.

The exhibitors—alphabetically arranged for convenience in locating them—and the wares they will display are as follows:

M. F.—Main floor.
E. P.—Elevated Platform.
U. B.—Upper balcony.
B. E.—Balcony extension.
E. H.—Exhibition hall.
R.—Restaurant.
F. T. B.—First tier boxes.
C. B.—Central boxes.
F. A.—Fourth avenue rooms.
C. H.—Concert hall.
S. T. B.—Second tier boxes.

(ALPHABETICALLY ARRANGED.)

Apperson Bros.' Automobile Co., Kokomo, Ind., Block K, M. F.—Apperson 4 cylinder touring cars.

Autocar Co., Ardmore, Pa., Block I, M. F.—Autocars, comprising the new 4 cylinder vertical and two double cylinder opposed models.

American Motor Co., Brockton, Mass., Block N. M. F.—Marsh cars and motorcycles.

American Roller Bearing Co., South Framingham, Mass., Block U, E. P.—American roller bearings.

American Ball Bearing Co., The, Cleveland, Ohio, Block X, E. P.—Ball bearing axles, wheels, etc.

American Coil Co., West Somerville, Mass., Block X, E. P.—Coils.

Auto Supply Co., New York City, Spaces 1 and 2, U. B.—Supplies.

Austin Automobile Co., Grand Rapids, Mich., Block A, E. H.—Austin cars.

America Co., Inc., Rockford, Ill., B. E.—Specialties.

Acme Motor Car Co., Reading, Pa., Block H, E. H.—Acme cars, including the new 4 cylinder 28 horsepower model.

Autocoil Co., Jersey City, N. J., Space B, C. H.—Coils.

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Weights, Powers and Prices at a Glance

and incidentally providing an interesting comparative study of strokes and bores, and the variations in power which they effect.

CAR.	Weight.	Horse-power.	Number cylinder.	Dimension.	Position.	Wheel base.	Price.
Orient Buckboard	500	4	1	3¼x4¼	V	80	$375
Orient Surrey	550	4	1	3¼x4¼	V	80	450
Overland	900	6—7	2	3½x4	V	72	600
Oldsmobile	...	7	1	5x6	H	66	650
Reo	850	8	1	4¾x6	H	72	650
Northern	1,000	6½	1	4¾x6	H	70	650
Covert	750	6½	1	4x4¼	V	72	650
Cameron	750	8—10	2	3⅝x3¾	V	76	650
Maxwell	850	8—10	2	4x4	H	72	700
Oldsmobile	...	7	1	5x6	H	76	750
Pierce-Racine	1,150	8	1	...	H	76	750
Marsh	785	10	2	4x4	V	80	750
Rambler	1,400	8	1	5x6	H	81	750
Cadillac	1,100	9	1	5x5	H	74	750
Overland	1,000	8—9	2	3½x4	V	78	750
Mitchell	...	9	2	4x4½	V	76	750
Acme	1,100	8	1	4x5	V	76	800
Marsh	900	10	2	4x4	V	92	850
Prescott	1,400	7½	2	Steam.	H	68	850
Grout	1,300	7½	2	Steam.	H	76	850
Autocar	1,200	10	2	3¾x4	H	70	900
Crestmobile	1,000	8½	1	4x5	V	76	900
Pope-Tribune	1,550	12	2	4½x4½	V	82	900
Cadillac	1,450	9	1	5x5	H	76	900
Cadillac	1,350	9	1	5x5	H	76	950
Ford	1,300	10	2	4¼x4	H	78	950
Oldsmobile	...	10	1	5½x6	H	82	950
Yale	1,600	14—16	2	4¾x4½	H	83	1,000
Union	1,650	12	2	5x4	H	81	1,000
Acme	1,200	16	2	4x5	V	76	1,000
Oldsmobile	...	10	1	5½x6	H	83	1,000
Cameron	1,150	12—15	3	3⅝x3¾	V	90	1,050
Michigan	1,600	14	2	4⅝x5	H	80	1,100
Pierce-Racine	1,550	16	2	...	H	90	1,100
Yale	1,650	14—16	2	4¾x4½	H	85	1,100
Jackson	1,600	16	2	5x5	H	86	1,125
Ford	1,400	12	2	4½x4	H	84	1,200
Buick	1,740	22	2	4½x5	H	85	1,200
Model	1,200	12	2	4¼x5	H	86	1,200
Union	1,750	16	2	6x4	H	94	1,200
Pierce	1,250	8	1	3 15/16x4 5/16	V	70	1,200
Wayne	1,550	16	2	5x5	H	80	1,200
Duryea	1,200	12—15	3	4½x4½	H	74	1,200
Premier	1,500	16—18	4	3¾x4¼	V	96	1,250
Michigan	1,650	14	2	4⅝x5	H	86	1,250
Jackson	1,600	18	2	5x5	H	90	1,250
Wayne	1,600	16	2	5x5	H	90	1,250
Reo	1,490	16	2	4¾x6	H	90	1,250
Duryea	1,000	12—15	3	4½x4½	H	72	1,350
Haynes	1,500	16—18	2	5x5	H	81	1,350
Rambler	2,000	18	2	5x6	H	90	1,350
Studebaker	2,000	15	2	5x5½	H	82	1,350
Compound	1,250	12—15	3	4x4	V	81	1,400
St. Louis	1,725	12	1	6x5½	H	82	1,400
Franklin	1,000	12	4	3¼x3¼	V	72	1,400
Oldsmobile	...	20	2	5¼x6	H	90	1,400
Autocar	1,700	12	2	4x4	H	76	1,400
Columbia	1,800	12—14	2	5x4¼	H	81½	1,500
Duryea	1,100	12—15	3	4½x4½	H	78	1,500
Mitchell	1,700	18—20	4	4x4½	V	90	1,500
Overland	1,500	15—16	4	3½x5	V	90	1,500
Northern	1,900	17	2	5¼x5¼	H	56	1,500
Grout	1,750	12	2	Steam.	H	86	1,500
Dolson	2,000	20	2	5½x6	H	90	1,500
Franklin	1,100	12	4	3¼x3¼	V	78	1,500
Knox	1,850	14—16	2	5x6	H	81	1,500
Haynes	1,500	16—18	2	5x5	H	81	1,500
Marion	1,600	16—18	4	4x4	H	96	1,500
Maxwell	1,800	16—18	2	5x5	H	86	1,550
Pope-Hartford	1,900	16	2	4¾x4½	H	88	1,600
Model	1,400	16	2	4½x7	H	86	1,600
Logan	1,620	20	2	4¾x5	H	90	1,600
Franklin	1,250	12	4	3¼x3¼	V	82	1,650
Orient	1,450	14—16	4	3¼x4¼	V	82	1,650
Acme	1,900	16	2	4x5	V	84	1,650
Pungs Finch	1,700	20	4	4x4	V	81	1,700
Franklin	1,650	12	4	3¼x3¼	V	82	1,700
Northern	2,000	17	2	5¼x5¼	H	100	1,700

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Weights, Powers and Prices
at a Glance

and incidentally providing an interesting comparative study of strokes and bores, and the variations in power which they effect.

CAR.	Weight.	Horse-power.	Number cylinder.	Dimension.	Position.	Wheel base.	Price.
Columbia	1,800	18	2	5x4¼	H	82	1,750
Duryea	1,200	12—15	3	4½x4½	H	95	1,750
Duquesne	1,650	16	4	3½x4	V	90	1,750
Knox	1,950	14—16	2	5x6	H	87	1,750
Wolverine	1,700	20	2	5x5	H	88	1,750
Wolverine	1,700	20	2	5x5	H	88	1,750
Winton	1,800	16—20	4	3½x5	V	88	1,800
Pungs-Finch	1,800	22	4	4x4½	V	97	1,850
Knox	2,000	14—16	2	5x6	H	90	1,900
Wayne	1,600	24—28	4	4x5	V	102	2,000
Corbin	1,700	16—20	4	3¾x4¼	V	94	2,000
Autocar	1,900	16—20	4	3½x4	V	96	2,000
Orient	1,700	18—20	4	4x4¼	V	96	2,000
Model	1,600	20	2	5x7	H	92	2,000
Ford	1,700	20	4	4¼x5	V	93	2,000
Compound	2,150	24—28	3	...	V	100	2,000
Rambler	2,200	20	2	5x6	H	100	2,000
Stoddard-Dayton	1,850	25	4	4x4	V	96	2,000
Covert	1,800	24	4	4x4½	V	94	2,000
St. Louis	2,200	20	3	4½x5	V	96	2,100
Lane	2,000	15	2	Steam.	H	97	2,250
Upton	2,000	30	4	4¼x4¾	V	100	2,500
Phelps	1,900	20	3	4½x4½	H	106	2,500
Frayer-Miller	1,800	24	4	4 1-6x5⅛	H	96	2,500
Marmon	2,000	16—20	4	4x4	H	90	2,500
Franklin	1,800	20	4	4x4	V	100	2,500
Winton	2,100	24—30	4	4⅜x5	V	102	2,500
National	2,250	24—30	4	4¼x5	V	98	2,500
Duquesne	1,800	24	6	3½x4	V	90	2,500
Stevens-Duryea	1,650	20	4	3⅞x4½	V	90	2,500
Yale	2,300	24—28	4	4¾x4½	V	104	2,500
Meteor	1,800	18	4	3¾x4½	V	91	2,750
Acme	2,275	30	4	4x5	V	102	2,750
Locomobile	1,800	15—20	4	3¾x4½	V	92	2,800
Cleveland	1,800	18	4	3¾x4½	V	98	2,800
Cadillac	2,600	30	4	4⅜x5	V	100	2,800
Pope-Toledo	1,800	20	4	3¾x4¾	V	88	2,800
Ormond	2,300	15	4	...	H	100	3,000
Haynes	2,750	35—40	4	5x5	V	108	3,000
Rambler	2,400	20	2	5x6	H	100	3,000
Studebaker	2,100	20	4	3⅞x4½	V	96	3,000
Austin	2,350	35	4	4¾x5	V	108	3,000
Royal	2,500	32—38	4	5x5½	V	108	3,000
Thomas Flyer	2,600	40	4	5x5½	V	104	3,000
Packard	2,200	22	4	3⅞x5⅛	V	94	3,000
Peerless	2,400	24	4	4¼x5	V	102	3,200
Standard	2,200	25	4	4x5½	V	108	3,500
Berg	2,300	24	4	4x5	V	96	3,500
Great Arrow	2,500	24—28	4	3 15/16x4¾	V	100	3,500
Winton	2,400	40—50	4	5¼x6	V	106	3,500
Franklin	2,400	30	4	5x5	V	104	3,500
Austin	2,400	50	4	5½x5	V	108	3,500
Limousine	2,800	40	4	5x5½	V	110	3,500
Thomas Flyer	2,700	50	4	5½x5½	V	110	3,500
Pope-Toledo	2,450	30	4	4½x5¼	V	100	3,500
Packard	2,350	28	4	4 7/16x5⅛	V	106	3,500
Locomobile	2,200	20—25	4	4x5	V	96	3,700
Apperson	2,500	24—30	4	4⅝x5	V	102	3,500
Apperson	2,750	40	4	5x5	V	102	4,000
Columbia	2,900	35—40	4	5x5	V	108	4,000
Corbin	2,400	24—30	4	4½x5½	V	106	4,000
Great Arrow	2,700	28—32	4	4¼x4¾	V	104	4,000
Stearns	2,700	32—40	4	4⅞x5⅛	V	111	4,000
Peerless	2,800	35	4	4⅝x5½	V	104	4,000
Royal Tourist	2,600	32—38	4	5x5½	V	108	4,000
Welch	2,800	30—36	4	4½x5	V	114	4,000
Lozier	2,500	30—35	4	4½x5½	V	115½	5,000
Ormond	2,800	25	4	...	H	108	5,000
Locomobile	2,500	40—45	4	4½x5½	V	106	5,000
Speedway	2,300	22—28	4	4½x5	V	105	5,000
Matheson	2,700	24	4	4½x6	V	106	5,000
Peerless	3,000	60	4	5¾x5¾	V	106	6,000
Matheson	2,800	40	4	4½x6	V	106	6,000
Thomas Flyer	3,000	60	6	5¼x5½	V	118	6,000
Pope-Toledo	2,650	45	4	5x5¾	V	104	6,000
Locomobile	2,800	40—45	4	5x6	V	110	7,500
American Mercedes	...	40—45	4	5x6	V	108	7,500

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Aurora Automatic Machinery Co., Aurora, Ill., Space B, C. H.—Thor motorcycles and fittings.

Allers & Co., H. A., New York City, Space 14, S. T. B.—Specialties.

American Lubricator Co., Detroit, Mich., Space 8, S. T. B.—Century lubricators.

Angiulli, Luigi, New York City, Space 10, S. T. B.—Specialties.

American Electrical Novelty & Mfg. Co., New York City, Spaces 23 and 25—Electrical goods.

Baker Motor Vehicle Co., Cleveland, Ohio, Block E, M. F.—Baker electric cars, consisting of a runabout, a Stanhope, a new surrey model and a depot wagon.

Baldwin Chain & Mfg. Co., Worcester, Mass., Block U, E. P.—Baldwin detachable and riveted chains.

Brown-Lipe Gear Co., Syracuse, N. Y., Block U, E. P.—Gears.

Briscoe Mfg. Co., Detroit, Mich., Block V, E. P.—Radiators and fenders.

Brennan Motor Co., Syracuse, N. Y., Block X, E. P.—Brennan gasolene motors.

Badger Brass Mfg. Co., Kenosha, Wis., Block X, E. P.—Solar acetylene gas lamps.

Baker & Thatcher, Attleboro, Mass., Space 25, U. B.—Puncture preventors.

Breeze Motor Co., Newark, N. J., Space 14, U. B.—Motors and carburetters.

Brown, Wm. H., Chicago, Ill., Spaces 31 and 32, U. B.—Dust shield.

Buick Motor Car Co., Jackson, Mich., Block E, E. H.—Buick double opposed cylinder cars.

Blomstrom Motor Co., C. H., Detroit, Mich., Block D, R.—Queen cars.

Brown, James, Machine Co., Pawtucket, R. I., Block H, E. H.—Cameron cars.

Bartholomew Co., The, Peoria, Ill., Block H, E. H.—Glide cars.

Byrne-Kingston & Co., Kokomo, Ind., Space A, C. H.—Carburretters.

Bowser & Co., Inc., S. F., Fort Wayne, Ind., Space C, C. H.—Gasolene outfits.

Brown & Sharpe Mfg. Co., Providence, R. I., Space C, C. H.—Machinery.

Bridgeport Deoxidized Bronze & Metal Co., Bridgeport, Conn., Space 16, S. T. B.—Castings.

Brew-Hatcher Co., Cleveland, Ohio, Space 19—Brew-Hatcher cars.

Cadillac Automobile Co., Detroit, Mich., Block F, M. F.—Cadillac cars, including the new 4 cylinder model and the Model B. and F.

Corbin Motor Vehicle Corporation, New Britain, Conn., Block G, M. F.—Corbin 1905 gasolene cars.

Covert Motor Vehicle Co., Lockport, N. Y., Block Q, M. F.—Covert cars.

Columbia Lubricant Co. of New York, New York City, Block U, E. P.—Lubricants.

Cooper, Dr. T. J., Paterson, N. J., Space 4, U. B.—Tires.

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Continental Caoutchouc Co., The, New York City, Spaces 20 and 21, U. B.—Tires.

Cramp & Sons' Ship & Engine Bldg. Co., Wm., Philadelphia, Pa., B. E.—Castings.

Coldwell Lawn Mower Co., The, Newburgh, N. Y., Block B, E. H.—Motor lawn mowers.

Central Automobile Exchange, Providence, R. I., Block A, E. H.—Specialties.

Crest Mfg. Co., Cambridge, Mass., Block G, E. H.—Crest cars.

Columbus Motor Vehicle Co., Columbus, Ohio, Block G, E. H.—Gasolene cars.

Concentrated Acetylene Co., Indianapolis, Ind., Space 52, F. T. B.—Acetylene gas and gas tanks.

Commercial Motor Co., New York City, Block E—Moyea cars.

Cleveland Car Specialty Co., Cleveland, Ohio, Space A, C. H.—Pressed steel frames.

Carlyle-Johnson Machine Co., Hartford, Conn., Space A, C. H.—Gears and clutches.

Cook's Sons, Adam, New York City, Space 12, S. B.—Grease.

Custead, W. D., New York City—Spaces 23 and 25—Specialties.

Constant Dynamo Co., Boston, Mass., Space 7, S. T. B.—Dynamos.

Daimler Mfg. Co., Long Island City, N. Y., Block O, M. F.—American Mercedes cars.

Duryea Power Co., Reading, Pa., Block K, M. F.—Duryea cars.

Dietz Co., R. E., New York City, Block T, E. P.—Lamps.

Diamond Rubber Co., Akron, Ohio, Block T, E. P.—Diamond detachable clincher tires.

Dow Portable Electric Co., Braintree, Mass., Block Z, E. P.—Spark coils.

Dayton Electrical Mfg. Co., Dayton, Ohio, Block X, E. P.—Apple dynamos.

Demmerle & Co., New York City, Spaces 22 and 23, U. B.—Clothing.

Duane & Co., W. J., New York City, B. E.—Specialties.

Dolson & Sons, John L., Charlotte, Mich., Block E. E. H.—Dolson cars.

De Dietrich & Co., New York City, Block F—De Dietrich cars.

Detroit Steel Products Co., Detroit, Mich., Space C, C. H.—Steel specialties.

Duff Mfg. Co., Allegheny, Pa., Space 18, S. T. B.—Auto jacks.

Electric Vehicle Co., Hartford, Conn., Block HI, M. F.—Columbia gasolene and electric cars, including several new models.

Elmore Mfg. Co., Clyde, Ohio, Block C, M. F.—Elmore Pathfinder and other models, all driven by the Elmore two cycle, double opposed engine.

Electric Contract Co., New York City, Space 11, U. B.—Electrical goods.

English & Mersick Co., New Haven, Conn., Spaces 27 and 28, U. B.—Locks, lamps and other metal specialties.

Edison Storage Battery Co., Glen Ridge, N. J., Space 26, U. B.—Storage batteries.

Eisenhuth Horseless Vehicle Co., Middletown, Conn., Block F, E. H.—Compound engine gasolene cars.

Ford Motor Co., Detroit, Mich., Block G, M. F.—Ford cars, including the new 4 cylinder vertical model.

Franklin Mfg. Co., H. H., Syracuse, N. Y., Block S, M. F.—Franklin cars.

Firestone Tire & Rubber Co., Akron, Ohio, Block U, E. P.—Solid tires.

Fisk Rubber Co., Chicopee Falls, Mass., Block Y, E. P.—Fisk mechanically fastened tires.

Funke, A. H., New York City, Spaces 37 and 38, U. B.—Lamps, horns, supplies, etc.

Federal Mfg. Co., Elyria, Ohio, Space D, C. H.—Frames, axles, gears, etc.

Grout Bros.' Automobile Co., Orange, Mass., Block J, M. F.—Grout steam cars.

Gray & Davis, Amesbury, Mass., Block U, E. P.—Headlight, side and tail oil and acetylene gas lamps.

Goodyear Tire & Rubber Co., The, Akron, Ohio, Block T, E. P.—Goodyear detachable clincher tires.

Gleason-Peters Air Pump Co., New York City, Block Y, E. P.—Pumps.

Gas Engine & Power Co. & Chas. L. Seabury Co., Consolidated, Morris Heights, N. Y., Block C, E. H.—Speedway cars.

Goodrich Co., B. F., Akron, Ohio, C. B.—Goodrich detachable clincher tires.

G & J Tire Co., Indianapolis, Ind., Block T, E. P.—G & J detachable clincher tires.

Hartford Rubber Works Co., Hartford, Conn., Block Y. E. P.—Perfected Dunlop detachable and Hartford and Turner tires.

Hartford Suspension Co., New York City, Spaces 23 and 25—Shock absorber.

Hardy Co., R. E., New York City, U, E. P.—Sta-rite spark plugs.

Hess-Bright Mfg. Co., The, Philadelphia, Pa., Space C, C. H.—Ball bearings.

Hine-Watt Mfg. Co., Chicago, Ill., Space 40, F. T. B.—Lamps.

Hyatt Roller Bearing Co., Harrison, N. J., C. B.—Bearings.

Hussey Drop Forge & Mfg. Co., Cleveland, Ohio, Space 46, F. T. B.—Fittings and supplies.

Howard Motor Car Co., Yonkers, N. Y., Block G, E. H.—Gasolene cars.

Hjorth & Co., Wm., Jamestown, N. Y., Space 33, U. B.—Wrenches.

Hendee Mfg. Co., Springfield, Mass., Space 17, U. B.—Indian motorcycles.

Herz & Co., New York City, Block X, E. P.—Spark plugs, etc.

Haynes-Apperson Co., Kokomo, Ind., Block D, M. F.—Haynes cars in three models, including the new 4 cylinder vertical engine car.

International Automobile & Vehicle Tire Co., New York City, Spaces 35 and 36, U. B.—Tires.

Imperial Wheel Co., Flint, Mich., Space D, C. H.—Artillery wheels.

Iron Clad Mfg. Co., Brooklyn, N. Y., Space 9, S. T. B.—Tanks.

Jeffery & Co., Thos. B., Kenosha, Wis., Block H, M. F.—Rambler cars, including the new side entrance model.

Jackson Automobile Co., Jackson, Mich., Block A, E. H.—Jackson cars.

Joseph W. Jones, New York City, Block X, E. P.—Speedometers.

Jersey Brake Co., The, Newark, N. J., Space K, C. H.—Brakes.

Kells Mfg. Co., W. J., Jersey City, N. J., Spaces 23 and 25—Radiators.

Kirk Mfg. Co., Toledo, Ohio, Block E, M. F.—Yale cars.

Knox Automobile Co., Springfield, Mass., Block I and M, M. F.—Knox cars, including two new double opposed models.

Locomobile Co. of America, Bridgeport, Conn., Block DE, M. F.—Locomobile gasolene and steam cars, the former in four models.

Lane Motor Vehicle Co., Poughkeepsie, N. Y., Block PP 1, M. F.—Lane steam cars.

Light Mfg. & Foundry Co., The, Pottstown, Pa., Block X, E. P.—Motorcycles and castings.

Lunkenheimer Co., The, New York City, Space 10, U. B.—Oilers.

Livingstone, D. McRae, New York City, Space 24, U. B.—Specialties.

Logan Construction Co., The, Chillicothe, Ohio, Block B, E. H.—Logan 20 horsepower cars.

Lear Automobile Co., Oscar, Cleveland, Ohio. Block A, E. H.—Miller-Frayer cars.

Mitchell Motor Car Co., Racine, Wis., Block D, M. F.—Mitchell cars, including two new models.

Matheson Motor Car Co., Ltd., Holyoke, Mass., Block F. M, F.—Gasolene cars.

Midgeley Mfg. Co., Columbus, Ohio, Black U, E. P.—Midgeley pressed steel wheels.

Morgan & Wright, Inc., Chicago, Ill., Block W, E. P.—Morgan & Wright clincher detachable tires.

Motor Car Equipment Co., The, New York City, Spaces 18 and 19, U. B.—Supplies.

Metz, Charles H., Waltham, Mass., Space 16, U. B.—Motorcycles.

Mack Bros. Co., Brooklyn, N. Y., Block A, E. H.—Cars and bodies.

Miller, Charles E., New York City, Space 34, U. B.—Sundries and supplies.

Michigan Automobile Co., Kalamazoo, Mich., Block C, E. H.—Michigan cars in two new models.

Marion Motor Car Co., Indianapolis, Ind., Block C, E. H.—Marion air cooled cars.

Morse Motor Vehicle Co., Springfield, Mass., Block E, E. H.—Morse gasolene cars.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y., Block C, R.—Maxwell runabout and touring cars.

Model Gas Engine Works, Auburn, Ind., Block G, E. H.—Model gasolene cars.

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Mason, Norris N., "Bollee," New York City, Block F.—Bollee cars.

Motsinger Device Co., Pendlton, Ind., Space A. C. H.—Auto sparkers.

Miller, Chas. E., New York City, F. A., A.—Supplies, parts and sundries.

McGlehan Odometer & Mfg. Co., New York City, Space E, C. H.—Odometers.

Manufacturers' Foundry Co., The, Waterbury, Conn., Space C, C. H.—Cylinder and other castings.

Mesinger Mfg. Co., H. & F., New York City, Spaces 24 and 26, S. T. B.—Tire protectors.

McCord & Co., Chicago, Ill., and New York City, Spaces 20 and 22, S. T. B.—Oilers.

Myers & Alexander, New York City, Space G, S. T. B.—Specialties.

Meyrowitz Mfg. Co., New York City, Space 15, S. T. B.—Goggles.

Merrell-Stevens Mfg Co., Kalamazoo, Mich., Space 11, S. T. B.—Jacks.

National Motor Vehicle Co., Indianapolis, Ind., Block Q, M. F.—National electric and gasolene cars, including the new model with circular bonnet.

Northern Mfg. Co., Detroit, Mich., Block J, M. F.—Northern touring car and runabout.

National Carbon Co., Cleveland, Ohio, Block U, E. P.—Columbia dry batteries.

New York & New Jersey Lubricant Co., New York City, Block U, E. P.—Lubricants.

Norman Motor Sleigh Co., Boston, Mass., Block B, E. H.—Motor sleighs.

New York Edison Co., New York City, Spaces 39 and 51, F. T. B.—Electrical specialties.

National Car Wheel Co., Rochester, N. Y., Space F, C. H.—Specialties.

New York Sporting Goods Co., New York City, Spaces 3 and 5, S. T. B.—Supplies.

Olds Motor Works, Detroit, Mich., Block D, M. F.—Olds cars, including the new double cylinder model and the light tonneau and the touring and curved dash runabouts.

Oliver Mfg. Co., Chicago, Ill., Space , C. H.—Jacks.

Ofeldt & Sons, F. W., Brooklyn, N. Y., Spaces 23 and 25—Trucks.

Pope Mfg. Co., New York City, Block BC, M. F., also Block X, E. P.—Pope-Toledo, Pope-Hartford, Pope-Tribune gasolene and Pope-Waverley electric cars.

Peerless Motor Car Co., Cleveland, Ohio, Block G, M. F.—Peerless cars.

Phelps Motor Vehicle Co., Stoneham, Mass., Block K, M. F.—Phelps cars.

Packard Motor Car Co., Detroit, Mich., Block Q, M. F.—Packard cars, including the new Model N, with 4 cylinder vertical engine.

Pierce Co., The Geo. N., Buffalo, N. Y., Block F, M. F.—Pierce Great Arrow and Pierce Stanhope.

Prescott Automobile Mfg. Co., The, New York City, Block S, M. F.—Prescott steam cars.

Phineas Jones & Co., Newark, N. J., Block X, E. P.—Artillery wheels.

Parish & Bingham Co., Cleveland, Ohio, Block U, E. P.—Frames, parts and fittings.

Pittsfield Spark Coil Co., Pittsfield, Mass., Block X, E. P.—Spark coils.

Pneumatic Tire Protector Co., Dayton, Ohio, Space 9, U. B.—Tire protectors.

Post & Lester Co., The, Hartford, Conn., Spaces 39 and 42, U. B.—Sundries and supplies.

Pierce Engine Co., Racine, Wis., Block A, E. H.—Pierce-Racine cars.

Pungs-Finch Automobile & Gas Engine Co., The, Detroit, Mich., Block E, E. H.—Pungs-Finch 4 cylinder touring cars.

Premier Motor Mfg. Co., Indianapolis, Ind., Block A, R.—Premier air cooled cars.

Palais de l'Automobile, New York City, Block F—Panhard and Renault cars.

Panhard & Levassor, New York City, Block F—Panhard cars.

Pennsylvania Rubber Co., Jeannette, Pa., Space C, C. H.—Tires.

Poly-Phase Ignition System Co., New York City, Space 1, S. T. B.—Electrical specialties.

Parker, Henry F., Newburgh, N. Y., Space 13, S. T. B.—Specialties.

Reliance Motor Car Co., Detroit, Mich., Block G, M. F.—Reliance 16 horsepower cars, with double opposed cylinder.

Royal Motor Car Co., Cleveland, Ohio, Block M, M. F.—Royal cars, including the new model with circular hood.

Rushmore Dynamo Works, Plainfield, N. J., Spaces 7 and 8, U. B.—Lamps.

Rose Mfg. Co., Philadelphia, Pa., Block Y, E. P.—Lamps.

Reliance Motor Cycle Co., Addison, N. Y., Space 15, U. B.—Motorcycles.

Roche, Wm., New York City, Space 30, U. B.—Autogas dry batteries, plugs, etc.

Reid Mfg. Co., Detroit, Mich., Block B, E. H.—Wolverine cars.

Reo Motor Car Co., Lansing, Mich., Block D, R.—Reo cars.

Rutter & Co., Arthur T., New York City, Space C, C. H.—Specialties.

Stevens Arms & Tools Co., The J., Chicopee Falls, Mass., Block A, M. F.—The new 4 cylinder vertical car, and also with the double cylinder opposed Stevens-Duryea type.

Stearns Co., F. B., Cleveland, Ohio, Block A, M. F.—Stearns 36 horsepower car, with 4 cylinder vertical engine.

Standard Motor Construction Co., Jersey City, N. J., Block C, M. F.—Standard gasolene cars.

Splitdorf, C. F., New York City, Block T, E. P.—Splitdorf spark coils.

Smith & Mabley Mfg. Co., New York City, Block R, M. F.—Simplex cars.

Studebaker Automobile Co., South Bend, Ind., Block R, M. F.—Studebaker electric and gasolene cars, the latter in two and four cylinder models.

Springfield Metal Body Co., Springfield, Mass., Block U, E. P.—Metal bodies.

Scandinavian Fur & Leather Co., New York City, Spaces 5 and 6, U. B.—Fur garments.

Scoville & Peck Co., The, New Haven, Conn., Space 3, U. B.—Pilot searchlight lamps.

Shelby Steel Tube Co., Pittsburg, Pa., Block Y, E. P.—Seamless steel tubing.

Standard Welding Co., The, Cleveland, Ohio, Block X, E. P.—Rims, tubing, etc.

St. Louis Motor Carriage Co., St. Louis, Mo., Block C, E. H.—St. Louis cars.

Standard Wheel Co., Terre Haute, Ind., Block H, E. H.—Artillery wheels.

Sprague Umbrella Co., Norwalk, Ohio, Spaces 48 and 50, F. T. B.—Sprague tops.

Swinehart Cushion Tire & Rubber Co., Akron, Ohio, Space A, C. H.—Swinehart nonpuncturable cushion tire.

Smith Co., The A. O., Milwaukee, Wis., Space D, C. H.—Frames, axles, gears, etc.

Smith & Co., Edward, New York City, Spaces 2 and 4, S. T. B.—Specialties.

Steel Ball Co., Chicago, Ill., Space I, C. H.—Hill oiler, Hill starter, etc.

Schwarz Wheel Co., Philadelphia, Pa., Space 21—Wheels.

Springer Motor Vehicle Co., New York City, Block N, M. F.—Springer cars.

Saks & Co., New York City, B. E.—Clothing.

Thomas Motor Co., E. R., Buffalo, N. Y., Block M, M. F.—Thomas cars, all of the four vertical cylinder type.

Timken Roller Bearing Axle Co., Canton, Ohio, Block X, E. P.—Roller bearings.

Trebert Automobile & Marine Motor Co., Rochester, N. Y., Space 13, U. B.—Motors and transmission gears.

Torbenson Gear Co., Inc., Bloomfield, N. J., Block E. E. H.—Gears.

Tokheim Mfg. Co., The, Cedar Rapids, Iowa, Space B, C. H.—Gasolene outfits.

20th Century Mfg. Co., New York City, Block X, E. P.—Lamps.

Utility Co., The, New York City, Space 11, S T. B.—Spark plugs and specialties.

United Motor & Vehicle Co., New York City, Block E, E. H.—Motors.

United Electrical Mfg. Co., The, New York City, Space 12, U. B.—Electric goods.

Upton Motor Co., Lebanon, Pa., Block E, E. H.—Pumps.

Union Automobile Co., The, Union City, Ind., Block E, E. H.—Union gasolene cars.

Vacuum Oil Co., New York City, Space 29, U. B.—Lubricants.

Veeder Mfg. Co., The, Hartford, Conn., Block U, E. P.—Veeder Odometers, Tachometers, etc.

Vehicle Equipment Co., New York City, Block O, M. F.—Electric trucks, broughams, etc.

Valentine & Co., New York City, Spaces 23 and 25—Varnishes.

Warren Automobile Co., Warren, Pa., Block H, E. H.—Gasolene cars.

Waltham Mfg. Co., Waltham, Mass., Block F, M. F.—Orient touring car and Orient buckboard, the former a 4 cylinder vertical type.

White Sewing Machine Co., Cleveland, Ohio, Block B, M. F.—Full line of White 15 horsepower steam cars.

Worthington Automobile Co., New York City, Block E, M. F.—Worthington 4 cylinder cars.

Winton Motor Carriage Co., Cleveland, Ohio, Block I, M. F.—Winton cars, comprising four new vertical cylinder models.

Weston-Mott Co., Utica, N. Y., Block U, E. P.—Wheels, axles and rims.

Whitney Mfg. Co., Hartford, Conn., Block U, E. P.—Whitney roller chains and standards.

Warner Gear Co., Muncie, Ind., Block X, E. P.—Gears.

Welch Motor Car Co., Detroit and Pontiac, Mich., Block D, E. H.—Welch cars.

Wayne Automobile Co., Detroit, Mich., Block C, R.—Wayne cars.

Worthington Automobile Co., New York City, Block B, R.—Meteor cars.

Wray Pump & Register Co., Rochester, N. Y., Space B, C. H.—Pumps and registers.

Warner Instrument Co., Beloit, Wis., Space B, C. H.—Specialties.

Willis Co., E. J., New York City, F. A., B.—Supplies, parts and sundries.

Whitlock Coil Pipe Co., Hartford, Conn., Spaces 42 and 44, F. T. B.—Whitlock coolers.

Webb Co., The, New York City, Space G, C. H.—Speed indicators.

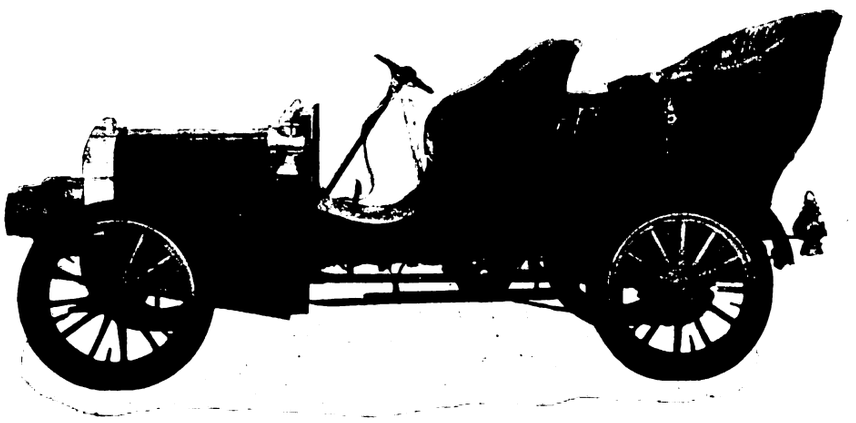
Whitehouse & Co., Chas. F., New York City, Spaces 23 and 25—Specialties.

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POPE-TOLEDO OF 1905

Famous Car Undergoes Considerable Refinement—Some of the Changes Made.

Few of the new models have been awaited with more interest than the Pope-Toledo. It finally made its appearance this week and proves to have been worth waiting for.



30 H. P. POPE-TOLEDO, TYPE VIII.

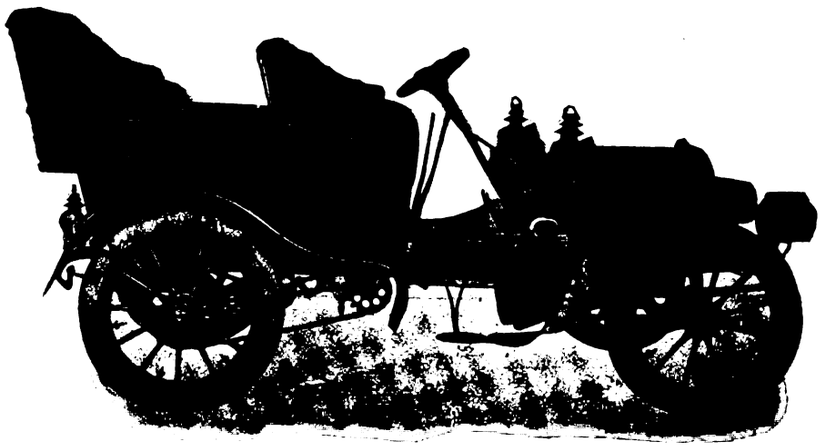
The leading Pope-Toledo feature, "direct drive on the high speed with all gears out of mesh is retained," but is worked out in more effective manner, the entire transmission device being considerably altered, the free use of ball bearings—which has been an ear mark of the car—having permitted of some desirable refinement.

The essential features of the car are as follows:

The cylinders are plain cylindrical castings with no cased water jackets, and are machined outside concentric with the bore, thus insuring an even thickness throughout, consequently there is no difficulty of warping out of shape due to unequal expansion or contraction. The upper part of cylinder is surrounded by a spun copper water jacket secured at its lower end by being let into an annular groove surrounding the cylinder and caulked with lead, and at the top extending over the end of the cylinder, forming the gasket between head and cylinder. The cylinder heads are water jacketed elbow castings, containing the exhaust and inlet valve chamber, also ignition plug, which is placed directly over the centre of the cylinder. Each head has projecting arms cast on them which extend out and meet corresponding arms on adjoining heads, and are tied together by means of a bolt and capped washer, thus insuring the perfect alignment of the cylinders.

The crank shaft is a weldless drop forging of high grade steel and is turned in special fixtures designed and built in the Toledo factory. The object of these special fixtures is the production of a perfectly straight and round shaft, and no expense has been spared to attain this end. A flange is turned on one end of the shaft, to whica the fly-wheel is bolted, not depending on keys to hold it. The crank shaft bearings are five in number and are of the finest phosphor bronze. The bearings are reamed after bolting into the case and then scraped to a perfect fit to the shaft itself.

The crank shaft bearings, crank pins and cam shaft bearings are oiled by the splash system. Just enough oil is used in the bottom of the case for this purpose and yet avoid an over-quantity being thrown into the cylinders. The cylinders are fed with a special form of mechanically driven oil pump. The feed of this pump is always in sight of the driver, thus avoiding any uncertainty in the important matter of cylinder oiling.



20 H. P. POPE-TOLEDO, TYPE X.

The commutator is of the rubbing contact type and is driven by spiral gears from the cam shaft. The location is such that it may readily be inspected and cleaned. Oil does not affect it; in fact, it is provided with a wick oiler, which keeps the bearings and contact surface constantly oiled, thereby insuring long life.

The fan for circulating air through the radiator is belt driven and is provided with ball bearings.

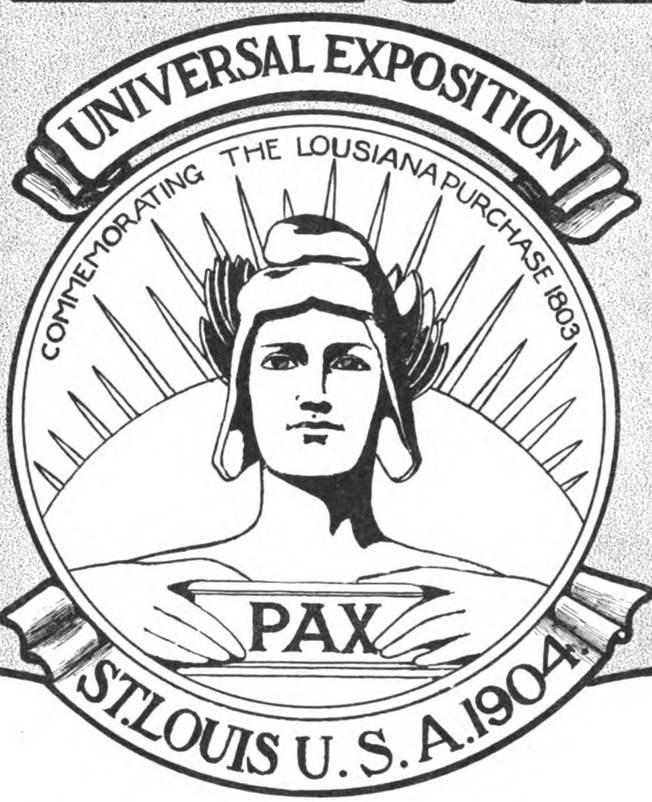
The change speed gear in this model is in principle the same as formerly employed, with modifications and considerable improvements, the most noticeable being the adjustable ball bearings on the drive shaft, which can be taken up for wear or loosened in the same manner and with the same tools as are used on the jack shaft bearings. The high speed clutch on the differential has been strengthened and the reverse gears arranged to be thrown out of mesh on all speeds forward. The speed ratio between the engine and jack shaft has been increased from one to ten-sevenths, which permit use of larger jack shaft sprockets and thus get quieter running and longer life out of the chains.

Another improvement of great importance to the efficiency and life of the transmission is the removal of the countershaft and gears from the bottom of the gear box and arranging them in the rear of and in the same horizontal plane as the jack shaft. This arrangement, with the addition of a centre support and the substitution of ball bearings for plain bearings, produces a quieter and smoother running combination and prevents chattering of the gears.

The direct drive on the high speed with all gears out of mesh and silent is retained, but the result is accomplished in a different manner: The gear box, which is of aluminum alloy in two parts, divided horizontally, is hung on transverse cross members of the frame. In addition to this support, the jack shaft brackets, to which are secured steel casing tubes brazed in flanged ends bolted to the gear box, are hung between and securely bolted to the vertical flanges to the side of the members of the frame. This arrangement forms one complete and rigid unit of frame and transmission, and prevents any loss of power between engine and sprockets due to springing and twisting of the frame. The jack shaft and drive shaft ball bearings, outside and in, are all adjustable from the outside without removing any part of the gear box, by means of a spanner wrench being applied to ball cup. This transmission gives three speeds forward and one reverse, all being controlled by means of one hand lever.

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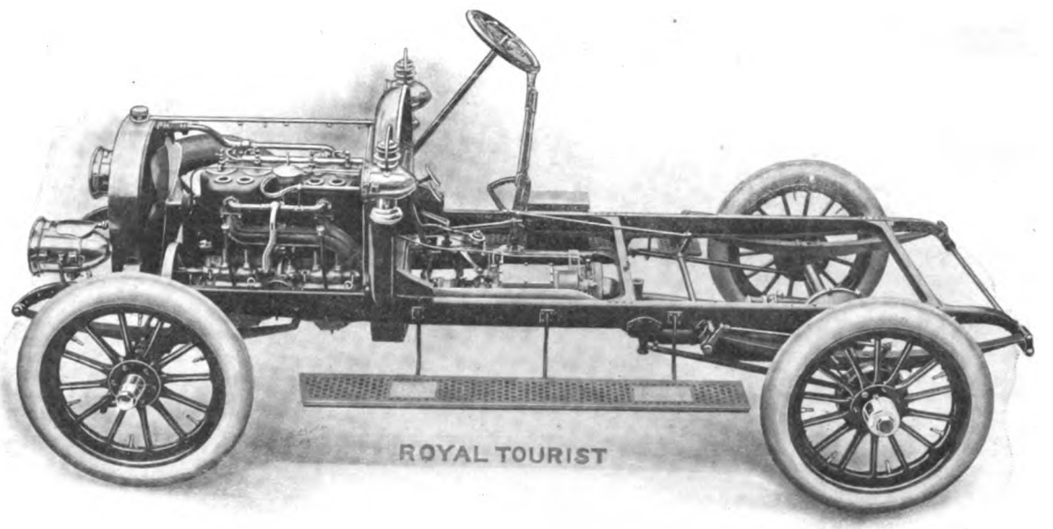
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FIGURING HORSE POWER

The Formulæ That Apply and Why They Afford Only Approximate Results.

With the approach of each annual exhibition, much comment is called forth by the widely varying results obtained by different designers of motors with so little apparent variation in dimensions.

It is a matter of common knowledge that attempting to follow the empirical constants evolved for the steam engine led gas engine designers so far astray in the first instance that one and all dropped them forthwith, and seemingly they have never come together again. The indicated horsepower of any engine is equal to 1-33,000 multiplied by the product of the mean effective pressure, the area of the piston, length of stroke in feet and number of power strokes per minute. In the case of steam engines this is usually expressed by the formula

$$H.P. = \frac{PLAN}{33{,}000}$$

in which:

P. Mean effective pressure in pounds per square inch.

L. Stroke in feet.

A. Piston area in square inches.

N. Number of power strokes per minute.

Taking into consideration actual working conditions, and allowing for drop in pressure from various causes, the results of this formula will be found to fall within close limits of error. But with the explosive engine so many disturbing factors are present that it is almost impossible to predict from cylinder dimensions, speed and fuel what power a given engine will actually develop. The most that can be done is to say what it should produce, granted that the numerous conditions of effective working are complied with.

Assuming a given compression sufficiently short of the practical limit as not to involve any danger of spontaneous combustion, a speed that is neither unreasonably low nor excessively high, that the various parts have been correctly designed, that the mixture is good and ignition takes place at the proper point, that the resistance of the various ports and passages is not so great as to prevent the cylinder receiving an approximately full charge, a formula may be evolved which will, as above mentioned, show the best result theoretically that may be expected from an engine of given bore, stroke and speed.

By omitting the compression factor, the man who visits the show or who reads in a catalogue that the stroke and bore of a motor are of given dimensions, and that R. P. M. are of a specified number, may obtain approximate results by following this simple formula, the calculation in this instance giving the brake or actual horsepower.

$$B.H.P. = \frac{D^2 \times L \times N}{18{,}000}$$

in which:

D. Piston diameter in inches or bore.

L. Stroke in inches.

N. Revolutions per minute.

The denominator varying according to the design of the engine and the character of the fuel.

By assuming a piston speed, this may be simplified to such an extent that, given the piston diameter, what any engine is capable of producing may be known with but little calculation.

General practice in four-cycle engines favors a piston speed of 500 feet per minute, in small stationary and marine engines up to 700 feet, and in automobile motors 800 to 1,000 feet, so adopting 600 feet per minute as a mean, we have

$$\frac{2 L \times N}{12} = \text{piston speed in ft. per minute, or } 600$$

$$L N = 3600$$

$$B.H.P. = \frac{D^2 \times 3600}{18{,}000} = \frac{D^2}{5}$$

in which D, L and N represent the same values as above. Thus with this piston speed the horsepower per cylinder would equal approximately one-fifth of the square of the bore. In other words, an engine, with a 5x6 inch cylinder, should produce 5 horsepower at 600 R. P. M., but this is somewhat lower than the speed of the average automobile motor. The denominator four will approximately express the difference represented by an additional one to two hundred revolutions per minute, and the same engine at 750 R. P. M. will produce 6¼ H. P., and so on in proportion as the speed increases.

For gasolene, E. W. Roberts, in the gas engine handbook, gives the following:

$$B.H.P. = \frac{D^2 \times L \times N}{13{,}500}$$

and this has been found to work out well in practice.

But the engine builder who blindly follows set formula is vastly disappointed at the concrete result, and the majority of those who have started with them as a working basis, toiled over a long and weary road, full of vexatious obstructions before producing a motor that fulfilled expectations to any extent.

Formulae, generally speaking, represent maximum values obtainable under ideal conditions, and this is particularly the case where they have not been continually modified and readjusted as the result of experience extending over a number of years, as is the case in automobile motor practice.

The Veteran and His Home Made Car.

At the forthcoming Lewis and Clark Exposition there will be shown a home made automobile manufactured by a veteran of the Civil War, Major R. B. Walker, an Oregon City machinist.

After exhibiting the vehicle, which will have a capacity of more than 1,000 pounds and will weigh about 840 pounds and be driven by steam, the engine being 7½ horsepower, the major expects to make a trip across the continent from Portland, Ore., to Portland, Me., in the car.

ABOUT COMPOUND ENGINES

The Efforts to Evolve Them and Why They Have Made Small Progress.

While it is now forty years or more since M. Beau de Rochas evolved the principle of the successful internal combustion engine—more often termed the "Otto cycle" through the fact of the latter inventor's having applied it—the period of greatest development of this power has been virtually confined to the past twelve to fifteen years, as has that of its rival in the automobile field—electricity.

More economical than steam at the outset by reason of its adaptability to the use of low grade fuels, the cost of maintenance has been so low as compared with other power, and so many other problems have engrossed the entire time and attention of designers and builders, that the question of further cheapening by means of a repeated utilization of the expansion of the exploded gases, or compounding, has not received much thought. The steam engine has been brought to the last point of ecffiiency by the repeated expansion of the steam until the latter falls to atmospheric pressure, and as the compound engine is much more effective than one utilizing but one drop in pressure, so the quadruple expansion—using the steam at four successive stages of pressure—has been found to be the most economical.

However, the different nature and action of the fuel, as well as the limitations of the internal combustion engine, have been such as not to readily permit of utilizing the expansion of the exploded gases more than once. In the steam engine cylinder a much better vacuum is present than can be obtained with the hydro-carbon engine, owing to the manner of exhausting the burnt gases, and there is no retarding action due to the lack of power and the necessity of compressing the fresh charge on the inward stroke. The steam is admitted at a point of compression regulated by the cut-off and expands more evenly, while the most effective expansion of the fuel in the hydro-carbon engine is brought about by exploding it at a point very slightly before the dead centre on the compression stroke is reached, and is more in the nature of a blow.

By an accurate computation of the amount of fuel to be exploded in the compression chamber of a cylinder of given dimensions, it is evident that this can be so adjusted as to utilize a very large percentage of the effective expansion of the gases in but one operation—from the highest point of compression to slightly more than atmospheric pressure at exhaust. When this result is attained, we have what even the novice declares a "smooth-running" engine; one that operates almost noiselessly at full speed with the minimum need for muffling. It is the combination of a properly designed engine equipped with an effective carburetor of the right capacity—both adjusted to pro-

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duce the best result, and, needless to say, there are any number of cars whose builders, after years of study and experimenting, have found just how to bring about this condition.

But this has been such a difficult stage to reach for many that there has been little desire and less time to experiment with compounding. A single expansion engine that will perform all that is expected of it has been the goal, and still is, with not a few. And with those who have attained to this there is a greater desire for further improvement along the same lines than one to delve into new complications, which, in the light of the present efficiency and needs of the automobile engine, promise little.

However, experiments have been made looking to the development of this type of internal combustion engine, but, as is readily evident, more with a view to applying it to stationary power purposes, such as electric lighting, in which the better balance obtainable is a greater advantage than for motor cars.

More attention has been given to the subject in England than probably in any other country, and though the engines constructed were successful, they have never been placed on the market. As no material economy is effected, it is much to be doubted if the advantages gained compensate for the additional complications in the form of an extra cylinder, crank, connections, etc., and the necessarily intricate valve mechanism. There is the added advantage of eliminating the muffler, as the burnt gases are expelled from the low pressure cylinder at atmospheric pressure, but a muffler is far cheaper and equally effective.

Patents were granted in that country several years ago on a compound gas engine, and one of 100 I. H. P. was built and gave satisfaction. It was equipped with two high pressure cylinders on either side of the expansion cylinder, and was of the four cycle type, thus obtaining two impulses—one explosive and one expansive—per revolution. The latter was found to add very little to the power of the engine, but was of great benefit in its scavenging effect, entirely ridding the high pressure cylinder of burnt gases. Silent operation was obtained by a simple system of distribution operated by a rotary valve, and for stationary power purposes the engine had much to recommend it.

It will be recalled that an attempt has been made to apply the same principle to the automobile motor in this country, but up to the present without any marked success. While a high state of efficiency has been attained in the four-cylinder vertical motor now favored in general practice, improvements are constantly being made, so that it is difficult to predict what the end will be, nor that in the process of evolution this type may not disappear. But as economy in fuel consumption is one of the features of the problem that will solve itself as increased efficiency is obtained, little attention may be expected to be given at present to such a radical departure that promises so little as does compounding.

WATER JACKETS NOT FINAL

Sir Oliver Pronounces them Wasteful and Suggests Substitutes with Red-hot Cylinders.

That he could not regard the water jacket as final in the construction of gasolene engines was the conclusion of Sir Oliver Lodge in a lecture delivered before the Automobile and Cycle Engineers' Institute, London, England, last month.

He first treated of the firing and combustion of the charges in the cylinders of cumbustion engines and the best methods of effecting the best results, and pointed out that for the purpose under review a gaseous mixture was better than a vaporous mixture, but remarked that a mixture of gas and air, in which the liquid fuel was sprayed into the latter, was coarser than the steam which issued from the spout of a kettle. A gas was simply a liquid divided ad infinitum. The bits consisted of molecules themselves. Sir Oliver then demonstrated by sketches on the blackboard the action of atoms in mixed gaseous bodies and the behavior of the combustion of such bodies, showing that compression of the charges was necessary to bring the ignitive particles in closer relation to each other in order that the combustion might be more rapid and the effect more pronounced.

He pointed out that each ignited particle fired the next one, and that therefore combustion of such charges really occupied an appreciable time. Rarefaction prevented combustion; compression aided it. It was also pointed out that the combustible atoms in a mixture must not be regarded as stationary. They were always in a state of motion, and the more lively that motion the more rapidly would the combustible atoms encounter each other. Therefore it was necessary to keep the temperature high, as an increase of temperature made the atoms more lively.

Then Sir Oliver showed that exact chemical mixtures did not give the best results from a combustion point of view. The reasons underlying the causes of powerful and weak explosions were attributed to the presence of other gases, which had a retarding influence upon the combustion by getting between the inflammable particles in the same way that water penetrated between the grains of sand. To get the best results, mixtures should be compressed and then ignited at several points at once. The lecturer then discussed the most desirable point at which charges compressed by pistons into the combustion chambers of cylinders could be ignited, and was in favor of doing so as near the piston as possible.

The speaker then demonstrated the undesirability and waste caused by water jacketing, and dwelt upon the possibility of motors with redhot cylinder walls. He could not regard the water jacket as final. The alternative might come in the shape of a turbine or Pelletan wheel, in which the disks and the walls might be redhot with advantage. Sir Oliver pointed out that if the air or gas were sufficiently compressed it would ignite combustible matter introduced to it, as in the Diesel engine, but thought that electrical ignition might be regarded as the natural method of producing the desired effect. He then showed that low tension ignition depended upon self-induction and magnetic induction. Self-induction might be called electrical inertia, and it was not always realized that electricity possessed inertia. Starting an electric current was like starting a barge in the water. Time was required for the current to attain its maximum velocity, and the spark at a spark gap was practically the smashing of the air by the current in bridging the gap.

Detroit's Y. M. C. A. School Expands.

The automobile school of the Detroit (Mich.) Y. M. C. A. has grown so fast and the demand for its work is so great that new men have been added to the corps of instructors. Bernard Fishback, who was formerly connected with the Searchmont Automobile Co., but is now superintendent of the erecting department of the Packard Motor Car Co., will have charge of the elementary course, and F. L. Faurote, assistant superintendent of the testing room at the Olds Motor Works, will have charge of the advanced course. Messrs. A. P. Brush, of the Cadillac Automobile Co.; H. W. Coffin, of the Olds, and E. J. Stoddard, of Parker & Burton, will still retain their connection with the school as lecturers. The winter term opened on January 3, 1905.

Why Some Men Select Foreign Cars.

The real reason why some men purchase foreign cars in preference to the domestic product was recently unconsciously disclosed by a wealthy and bewhiskered snob who chances to be a director of the Automobile Club of America and who figures as a "patron" of the little collection of imported machines now being displayed on the top floor of Macy's dry goods store.

Another member of the club—one of much more prominence than the snob in question—had just remarked his purchase of one of the biggest and most reputable American cars, hearing which the snob rejoined:

"You don't buy your clothes in Baxter street, do you?"

Shattuck Pleads for Good Roads.

A. R. Shattuck, former president of the Automobile Club of America, appeared at a meeting of the Chamber of Commerce of New York last Thursday and urged the members to indorse a resolution urging the expenditure of $50,000,000 on the highways of the State. The resolution was referred to the executive committee.

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In the Service of Uncle Sam.



THE OLDSMOBILE MAIL WAGONS AS EMPLOYED BY THE DETROIT POSTOFFICE.

A. C. A. Prepares to Build.

The much-talked-of plan for a clubhouse and garage for the Automobile Club of America assumed definite shape at a special members' meeting held last Tuesday night in the organization's present quarters, at 753 Fifth avenue. The board of governors was authorized to form a construction company, if they deem it advisable, to take over the site of the clubhouse and garage and carry on such building operations as the governors may direct. The stipulation is made that the construction company must first enter into a contract with the club to sell the property with the building back to the organization when the structure has been completed. A building committee, comprising Albert R. Shattuck, chairman; Colgate A. Hoyt and Dr. S. S. Wheeler, was appointed by the board of governors and confirmed in a formal resolution by the club members.

Another resolution directed the board of governors to secure a site "located in such part of the Borough of Manhattan as they shall deem most desirable, and to erect thereon a suitable clubhouse and garage." The president and treasurer were "authorized to sign all papers, contracts, agreements, mortgages and bonds in relation to the building of such clubhouse and garage which are approved by the Building Committee." President Dave Hennen Morris presided at the meeting, at which much wealth was represented. Among those present were Homer W. Hedge, Charles E. Miller, J. D. Thompson, Orrel A. Parker, Winslow E. Buzby, A. R. Shattuck, J. V. Black, George F. Chamberlin, John Jacob Astor, George B. Adams, Jefferson Seligman, James L. Breese, William H. Browning, Henry C. Cryder, S. W. Taylor, Emerson Brooks, A. H. Overman, G. G. Bain, F. G. Bourne, W. W. Niles, Frederick B. Cochran, Arthur Iselin, Robert Goelet, W. E. Scarritt, Alan R. Hawley, J. A. Blain, R. W. Meade, Charles S. Towle, Augustus Post and Carl H. Page.

The Lady Meets the Promoter.

Mrs. R. F. Woodward, who is described as one of the best known horsewomen on Long Island, is reported to be the chief promoter of an organization to take over the racetrack at Huntington, L. I., with a view to running fairs, horse shows and automobile meets. Many prominent residents of New York and Brooklyn are said to be interested in the project. A former six day bicycle racer, is also alleged to have given his more or less valuable approval to Mrs. Woodward's projected enterprise. He is said to have told the lady he could see no reason on earth why national meets should not be held on the track, and even "unselfishly" volunteered to arrange and manage a meet some time during the coming season.

Rhode Islanders Elect and Eat.

The Rhode Island Automobile Club, of Providence, held its annual election and banquet last week. Officers for the ensuing year were elected as follows: President, Dr. Julian A. Chase; first vice-president, William Penn Mather; second vice-president, Darwin Almy; treasurer, Howard D. Wilcox; secretary, Elliott Flint; governors, to serve until 1908, Charles O. Read and Darwin Almy.

The election was held in the clubrooms in the Crown Hotel, after which the members adjourned to the Wellington Hotel for the banquet, President Chase acting as toastmaster. Among the speakers were President Harlan W. Whipple, Augustus T. Post and Secretary C. H. Gillette of the American Automobile Association, and President Asa Goddard of the Worcester Automobile Club. Mr. Gillette reminded the clubmen that the first automobile race in this country was run at Narragansett Park, in Providence, during 1888, when eight machines competed in a five-mile contest.

"A beautiful two-seated, canopied, light touring car, with a seating capacity for four persons," is to be the principal prize at a baseball carnival to be held at Dubuque, Iowa, on February 6 to 11. The vehicle cost $900, and the tickets will be sold for 10 cents each.

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MURPHY'S PARTING BLAST

New Jersey's Retiring Governor Urges Low Gear Law and High Annual Fee.

If it had been delivered by an incoming instead of an outgoing executive, the message of Governor Franklin Murphy, of New Jersey, would doubtless carry more weight. The message, which was read to the New Jersey State Legislature at Trenton on Tuesday, contained a veritable broadside at automobilists. In fact, the Governor was so taken up with the subject that he devoted three times as much space to the "Regulation of Automobiles" as to any other single subject. In this section of his message he offers two suggestions, one an almost entirely new idea, though the other is based upon the long prevalent theory in New Jersey that automobilists are legitimate prey for all sorts of exactions.

As a means of stamping out the "scorching evil," Governor Murphy advocates a law which will compel all automobiles using the highways of the State to be so geared that a greater speed than twenty miles an hour would be impossible. He thinks that automobiles have been so improved that such a plan is feasible, as the cars could be so fixed they could still use their reserve power to climb hills. The other plan would lead a disinterested observer to think that the Governor was taking a leaf from the book of those gentle New Jersey bandits who not so long ago waylaid automobile parties on lonely roads and then, in the assumed guise of officers of the law, proceeded to fine each individual member of the party without any discrimination. He proposes that the Legislature revoke the present law, which provides a perpetual license for the modest fee of one dollar, and offers a somewhat astonishing substitute. Charge all automobilists five dollars a year for permission to use the State highways, says the Governor, and he adds, as a sort of sop to the automobile fraternity, and allow the State authorities to be guided in some slight measure by the automobile clubs in picking out the highways which would be built or improved with the funds collected for licenses.

That part of the Governor's message relating to the regulation of automobiles was as follows:

"I desire to call the attention of the Legislature to the necessity of a revision of the present law concerning the regulation of automobiles. That law was carefully considered by the Legislature when it was passed two years ago, and it is generally regarded as, upon the whole, perhaps the best law that has been passed by any State. The difficulty lies in its enforcement. The speed is limited on country roads to twenty miles an hour, but a large number of machines that are constantly used on the roads of the State have a speed of thirty or forty, or even fifty miles an hour, and they use it. In cities the speed is limited to eight miles, and in certain other localities to varying speeds up to the highest limit.

"There seems to be an infatuation in the running of a machine that incites the driver to get the best possible out of it whenever he thinks he can do so with safety, and, notwithstanding a certain element of danger, the exhilaration of the sport is such that it seems to be impossible for him to resist the temptation to send his machine along at its utmost speed whenever he may do so without being arrested for violation of the law. Indeed, he forgets the law in the pleasure of the sport.

"The result is that horses are frightened, and women and children who are out for a pleasure drive have their enjoyment greatly diminished, if not wholly destroyed, by the fear that their horses may run away because of the machines, and in many cases accidents happen which result in permanent injury, and much too often in loss of life. I understand perfectly well the attitude of the automobile driver. He thinks that there is little, if any, danger, and he assumes that the people will get out of the way and that the road will be made clear for him by other vehicles, which, up to the time of the invention of his death-dealing machine, felt that they had the right to the road.

"Hardly a day passes when the papers do not speak of some serious accident caused by the automobiles. It may be to the occupants, or to the helpless and frightened citizen ,but death and accident are of daily occurrence. If the number of accidents from reckless automobile driving could be collected, their number would be appalling, and I think it is not going too far to say that, however alluring and interesting a sport may be, no one has a right to pursue it at the cost of permanent or fatal injury to others. I am informed by those who are qualified to know that if the law were fully observed, and no machine was ever run at a speed to exceed twenty miles an hour, at least ninety per cent. of all the present accidents would be avoided. It seems to me, therefore, to be clearly the duty of the Legislature to provide for the strict enforcement of the law, which limits the speed to twenty miles an hour.

"Fortunately, this can be done without the slightest difficulty. When the present law was passed, I suggested that the machines should be so geared that it would be impossible that the speed named could be exceeded. At that time I was informed that the power necessary to cause a machine to ascend the grades on our steepest roads was such as would cause them to make a much higher speed on the level, but improvements have been made so that a machine can be geared to attain a speed not to exceed twenty miles an hour and still have a reserve power which will take it up the steepest grade. I earnestly recommend, therefore, in the interest of a frightened and suffering humanity, that the present law be so modified that no machine shall be permitted on the roads of this State unless it shall be geared so as to make a speed higher than twenty miles an hour impossible.

"The present law requires a license of $1 to operate an automobile in the State, and, having once paid the dollar, the privilege continues indefinitely. The number of licenses issued amounts to over 7,000.

"I think a license fee of $5 a year can be obtained without serious objection, and I suggest that the law be amended to require this, and that it be provided that the sum obtained from the sale of licenses to automobilists, which may easily reach upward of $30,000 per annum, shall be expended on the improvement of the roads of the State under the supervision of the commissioner of roads, controlled, as far as he may think wise, by the requests of the automobile clubs of the State, and the sum expended on the roads from this source be in addition to any sum appropriated by the Legislature.

"I think, also, that the examination of automobilists is not as thorough as it should be. A man who drives an automobile should be enough of an engineer to understand his machine, and better supervision for his more thorough examination should be made. It is important, also, that he should not only understand his machine, but should also know the law which governs the use of automobiles in the State, and I suggest, in the proposed amendments to the law, that the examination of the driver shall include his knowledge of the automobile law, as well as the construction and operation of his machine.

"I understand perfectly well how much my suggestions as to speed limit will be objected to by those who have high-powered machines built for speed or for speed contests. But the answer is swift. No pleasure is justified, nor will it be indulged in by humane persons at the cost of fatal injury to others. Let high-powered machines be built, and let them be run on tracks prepared for the racing. Let them be taken there and taken away by other contrivances, but let them be kept off the roads absolutely, and let the punishment for any infringement of the speed law be imprisonment for not less than thirty days, without any exception whatever. The speed law cannot be enforced as long as the penalty for infringement is a fine."

Indianians Prepare for Battle.

The Marion (Ind.) Automobile Club has taken steps to combat the hostile automobile bills which are likely to be introduced in the State legislature in the near future. At its last meeting of the organizatiton Charles Michaels was appointed as chairman of a committee, with authority to select his associates, which will arrange with other clubs in the State to have their interests represented at Indianapolis when the session of the legislature opens.

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EFFECT OF NIGHT AIR

Ingenious Attempts to Explain the Changed Behavior of Motors After Sunset.

On "the other side" the discussion of the question, "Why does an engine run so much better at night than during the day?" has attained strength and volume that have brought with them a number of attempted explanations that are at once interesting and ingenious, although none has yet advanced the proposition that the better running at night may be due to the fact that license numbers are not so much in evidence.

Here is what one of the foreign motorists deems the "true explanation":

"Assume the engine running full power and the atmosphere dry. Then a perfect carburettor will supply a full charge of exactly such proportions of petrol vapor and air as will result in complete combustion. Now, if we suppose the atmosphere to hold a certain quantity of water vapor in suspension, as is the case in damp weather, I think consideration will show that for every reason loss of power will follow: For (1) the atmosphere is less dense and there is less pressure to force the charge into the cylinder, (2) the water vapor will be converted into steam on entering the hot cylinder, and so greater resistance to compression will be offered, (3) the heat developed by the first part of the explosion will be taken up in part in expanding the free steam, and combustion will consequently be checked, and (4) (most important of all) the air being less dense, there will not be the same proportion of oxygen available, and combustion will therefore not be complete. In considering these points, the simple principle of the petrol engine should be borne clearly in mind, namely, that the mixture of petrol vapor and air, when ignited, burns and forms carbonic acid gas and water (in the form of steam), and that it is the expansion of these gases, caused by the heat generated on their formation, which gives the power. The greater the heat, therefore, the greater the power.

"On a bright, clear day the radiation of heat from the earth's surface is free and uninterrupted owing to the absence of clouds.

"When the sun sets, this radiation is very rapid and quickly cools down the air in the neighborhood. This fall in temperature causes a portion of the moisture in the air to condense and be deposited; consequently the air is rendered a more efficient component for the mixture, and any engine inhaling it should develop greater power.

"This explanation is that given to account for the familiar phenomenon known as "fall of dew," and will be found in any text book on physics."

Another party to the discussion affirms in all seriousness that his car runs better when "far from the madding crowd," suggesting that there may be necessary new legislation to prevent the contamination of the atmosphere in large cities. His engine, he adds, "seems to take the bit in its teeth and fairly romp home." Sounds like the actions of a "dinner bound" nag, but here is his humble opinion of the cause:

"I believe, to get the maximum of work from a petrol engine, the cylinder must be hot (not overheated), and these short runs tend to thoroughly warm up the cylinder, thereby thinning the coating of lubricating oil, and, if the piston rings are in good condition and a good fit, allowing the piston to work easier (without loss of compression) than if the cylinder were cold and the oil therefore thicker, tending to clog the piston ring.

"But not only this, the hot cylinder warms the gaseous mixture at points furthest from the point of ignition, making it of a more even and higher temperature all through, this, I believe, tending to quicker and more instantaneous combustion than would be the case if some portions of the mixture were of a lower temperature than others, the colder portions having more of a burning action than an explosive one.

"Now, as a contrary cause, I have observed that on approaching the country from the town the engine runs better, due to the air being purer, this purer air aiding combustion owing to the greater proportion of oxygen which it contains.

"I would suggest the theory, therefore, and would be glad of confirmation or correction, that during the day the sun absorbs a certain amount of oxygen from the air, varying in proportion as the sun shines brightly for hours or only intermittently, and that as the sun goes down and night approaches the air gets cooler, this cooler air containing a greater proportion of oxygen, therefore forming a better mixture.

"To this I ascribe the fact that an engine developing a certain power requires less air in the colder months than in the warmer months to develop this power, the smaller volume of cold air containing about the same amount of oxygen as a proportionately larger volume of warm."

The explanation put forward by the next correspondent is short and to the point. It is a gem, and really deserves a niche in the Hall of Fame. He accounts for the phenomenon "by the higher atmospheric gases that come from the leafage, trees, etc., which does not show itself in the daytime. This causes a richer mixture, a better explosion, and so more power in the engine," entirely overlooking the fact that the composition of the atmosphere is kept practically constant by the absorption of carbonic acid gas by plant life and the radiation of this revitalized air by the sun's heat. Consequently more "atmospheric gases from leafage" are produced during the day, but the sudden drop in temperature at sundown renders the air proportionately denser and richer in oxygen. This is very noticeable in the invigorating effect of the air shortly after sunrise in spring and summer, which disappears in a few hours.

The density of the atmosphere naturally varies with its temperature, and the effect on a running engine would be very marked if the latter were suddenly transferred to a cold storage room on a warm day.

Berlin Motorists Become Patriotic.

The Berlin Automobile Club is forming a "voluntary corps" of automobilists, to serve as a regular section of the Prussian troops in time of war. The military authorities have accepted the offer of this corps and thanked the club for its initiative.

Members of the corps will furnish their own automobiles, but if it can be shown that the automobile is of real service in the field the authorities have the intention of organizing another corps on a more decided military basis. The question of the utility of the automobile in war time has been much discussed in Berlin for some years, but opposition toward making so expensive and seemingly uncertain experiment has been so strong in some quarters that there has never before been a practical trial. The club has engaged competent engineers to study the subject of the type of car most suitable for use in the field, and to outline their general idea of the role the automobile should play in war time.

Russian Devises a Sleigh-Boat.

For crossing Lake Baikal a Russian engineer has invented a combination motor sleigh and boat. It will run over the ice or in the water. Its form resembles that of a boat, below which are set two steel bars, which serve as runners. The sleigh is propelled by a wheel driven by the gasolene motor, the wheel having points to enable a grip of the ice to be obtained. When the boat is in the water the motor is connected to a propeller by a clutch.

Lottery at the Paris Show.

Every visitor to the Paris Salon received a numbered ticket entitling him to participate in the "Tombola" or draw for the hundred or so prizes which are annually offered by various firms in connection with the exhibition. The draw took place on Sunday evening, at the end of the show. The first prize was at 10 horsepower car, the second a piano and the third a car body.

Paris's "Chair of Automobiling."

For a new industrial college shortly to be opened in Paris a chair of automobilism is to be jointly supported by the State, the Department of the Seine and the city of Paris. Students at the college have to undertake a four years' course of lessons, and will not reach the motoring instruction until the first three years are passed.

Where Horsepower is Taxed.

Six dollars a year and $1 a unit horsepower is the heavy tax imposed by the province of Liege, in Belgium. Chauffeurs and owners are warned that any mistake make in filling out their declaration will be severely punished, either by fine or imprisonment.

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WHY AIR-SHIPS DON'T FLY

A Subject that Examplifies the Paramount Importance of Getting the Proper Motor.

At first sight the question, Why won't airships fly? will strike the average motorist with about the same force as would the question, Why wouldn't the Keeley motor work? The Keeley did work, but not very long. So does the flying machine fly, but the sickening regularity with which it comes to earth or takes to water are, to say the least, painful.

To go back a few years, Why has nothing more been heard of Count Zeppelin's tremendous creation? The largest of its kind ever attempted, the prediction of its value in peace and war halted at nothing short of the impossible. Why did Santos Dumont drop with such amazing frequency? Why did the Mediterranean airship contest end in the wet? Likewise, why did Professor Langley bathe in the Potomac so often? Why were the much advertised St. Louis airship races one and all a fiasco—in other words, why were there no St. Louis races and no claimant for that $100,000? It isn't necessary to look to the stars for answer. Aeronauts have had more than half a century's experience in building balloons, and one of the latter has made a highly successful trip of twelve hundred miles—with the wind. It had no motor. The most of instances cited had motors that were things of beauty, but not a joy, for more than than a few minutes at a time, when they quit, often for all time.

Engineering formulæ only become of value through long experience, and after their application and its results in actual practice have become definitely ascertained. The first designers of internal combustion engines took the experience of the steam engine builder as a guide, for it was the only data available. There is no necessity of recalling the result, for it is now many years since the builders of motors and motor cars came to a realization of the fact that there were no standards to follow, and set about making their own.

In the light of present day success the years of struggle with cylinder dimensions, stroke, compression and the thousand and one details that harassed the man who would build an engine of a certain power that would run and develop that power, are like a nightmare. At one period of this process of evolution there were scarcely two engines of identical dimensions on the market at the same time, while others that varied but a fraction of an inch in bore or stroke were rated several horsepower apart at practically the same speed. Scarcely any two agreed on the matter of the admission of the fuel to the cylinder and the manner of freeing the latter from the burnt gases simultaneously, but the question of ports or valves and their dimensions resolved itself into one of the latter (in the case of 4-cycle engines), on which point there still exist two distinct schools. Likewise the majority of other differences have either been settled by agreeing on a standard worked out as the result of long experimenting or, as in the case of the radical diversion of opinion as to the efficiency of automatic or mechanically operated valves, by setting up two or more standards.

Instead of taking advantage of the hard-earned experience of the motor car builders, many designers of gasolene engines for aeronautical purposes have gone ahead almost entirely on their own hook. To a certain extent only have they begun where the man who by dint of perseverance in the face of heart sickening failures, finally learned to build a motor, left off. They have accepted his power formula, and using it as a basis have in many instances, almost regardless of mechanical or other limitation, tried to improve upon them. The results have been amazing to contemplate—on paper, and equally amazing to the man who has tried to operate one of these creations. With the use of a few hundredweight of metal, seldom reaching or exceeding the quarter-ton mark, is produced a motor confidently rated by its builder to give 20 to 30 H. P. By the mere use of a pencil, paper and a few figures, 10 to 20 pounds of metal in conjunction with the usual mixture of gasoline and air properly exposed under compression, are to be compelled to raise 33,000 pounds one foot per minute, or its equivalent in effective work—and they do in theory. Oh, no; the figures don't lie, but the motor does, as a rule, except when it is cranked.

In order to reach this marvellous result, speed is the greatest desiderata, and the airship motor is designed to run at 2,000 to 2,500 R. P. M., despite its attenuated cylinder walls and moving parts. The moving parts of a high speed reciprocating engine must be light in order that too great a proportion of the power developed be not consumed in turning the engine alone, so that it is not ordinarily in this feature that the engine is greatly at fault. But, consider for a moment what 2,000 R. P. M. involves. Given a stroke of 6 inches, it means a piston travel of 12,000 feet a minute; in other words, bearing surfaces are being rubbed together at a speed of more than twenty miles an hour, and the engine is air-cooled. In the space of sixty seconds each valve must open and close one thousand times. At 2,000 R. P. M., but .03 of a second is available for the completion of each revolution, and but .06 of a second is consumed in the performance of the four parts of the cycle necessary to an explosion. Light will penetrate a focal plane shutter and cover every part of the sensitized plate in a camera in 1-1200 of a second, but a gasolene mixture will not fill a cylinder and simultaneously expel practically its own bulk of exploded gases in the course of .015 of a second, as is necessary in the case of a two-cycle engine. Where a four-cycle engine is concerned, this length of time (.015 seconds) would be available for each operation—i. e., suction and exhaust, but in either instance as the effective area of the valve or port opening is but a small fraction of the space to be filled, its limitations are sharply defined. Still, in spite of this and numerous other shortcomings, these engines do run—at times—but their operation is more of a mystery than their failure to do so, and it is usually only after persistent tinkering for days at a time that they start—more often to the surprise of the inventor than otherwise—only to lay down again in a short time. A replica of the experience met with in the first automobile engines, though from different causes.

All questions of balloon or aeroplane in the background, the principal reason why one or the other will not fly where wanted, for any length of time at least (record performance is between one and two miles), may be appreciated in a glance at some of the numerous reasons why the motor, usually built by the inventor from his own original ideas, won't mote, and there you have it. Even a trolley car comes to a stop when the power is off.

ARIEL.

"Jail 'em," Says Connecticut's Executive.

Connecticut's simple and effective automobile law has hitherto been regarded as almost a model of its kind. But it evidently does not please the Governor of the Nutmeg State. Even the requirement that all rubber tired vehicles shall carry lights after dark does not got far enough to suit him; he wishes it made to apply to all vehicles—which would be a rattling good step.

The views of Connecticut's Executive relative to the law are given in the appended extract from his annual message:

"The law regulating the speed of automobiles on our highways has proved a failure, largely because the penalty imposed for its violation is not severe enough to insure its observance," he declares. "I recommend that the penalty for the violation of that law be increased so as to permit a jail sentence in aggravated cases. I am credibly informed that wealthy residents of other States, who use Connecticut merely to run over it, boast of the fines they have to pay, and count pursuit by the officers of the law a part of the fun of the transit of the State. Every automobile should be distinctly numbered. There should be no exception.

"The loopholes in the present law are taken advantage of to abuse and discredit it. The bicycle lantern law is dead and ridiculous. In my opinion, the public safety would be greatly advanced if the law required all wheeled vehicles out after dark to carry lighted lanterns."

White numbers on a flaring crimson ground will show the 1905 automobile license numbers of motorists in the staid Quaker City. For these tags and a renewal of his license for 1905 each Philadelphia automobilist must pay $1 or get a license in some other county. At the license bureau in the City Hall there were 2,338 licenses issued for last year, while in 1903 only 1,663 machines were registered.

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OLDFIELD'S TONGUE WAGS

Talks Freely of Mile Records and Lets Fall Some Unpleasant Intimations.

Barney Oldfield has some friends with peculiar ideas. If only part of what he told a Detroit interviewer is true, some Denver friends of the track champion "have something coming to them." Oldfield's remarks are especially interesting, in view of the fact that A. R. Pardington, the retiring chairman of the American Automobile Association's racing board, intimated strongly this week that both the Oldfield and Kiser mile records would be rejected. A mail vote of the members of the racing board has been taken and Mr. Pardington has referred the whole case for final decision to the directors of the A. A. A. at their meeting in New York next Monday. Though Oldfield made an intermediate mile at Denver in 0:51 1-5, according to his press agent and some few partisans, the fastest intermediate mile announced at the track side that day was a full second slower, or 52 1-5 seconds, it being the fourth mile of an eight-mile ride.

"The fastest mile ever driven in an automobile on a circular track was in 53 seconds, and I did it several times at Los Angeles," said Oldfield in Detroit.

"I never claimed that mile in 51 1-5 seconds at Denver, which, I see, the racing board has refused to allow," he continued. "That was a mile like Kiser made. You remember Kiser claimed one in 52 4-5 seconds in Cleveland, and friends of mine who clocked it got it in 56. Anyhow, it was advertised, so I did not object when Denver friends of mine sent out that I had driven in 51 1-5, but I never asked the racing board to sanction it. I did claim a mile in 53 1-5 seconds that day, and have since claimed miles in 53 flat at Los Angeles, where the meet was regular and sanctioned, and I guess this record will be allowed."

After having paid his respects to Kiser, Oldfield proceeded to air a few of his views regarding the timing of races at Ormond Beach, which should not increase his popularity when he arrives there. In the course of his remarks he hinted that records depended on the timekeepers. When he was asked how fast he expected to drive at Ormond he answered:

"I don't know, but my machine is to-day faster than was Vanderbilt's when they allowed his record of 39 seconds. Funny thing about that record of Vanderbilt's. He drove in 39 one day, they said, and next day I beat him in 46, and it was 49 when he finished.

"The whole trouble is this: Everybody is motor speed mad. They all overestimate the Ormond beach; there isn't a man who underestimates it. The man who built my Green Dragon wrote me and said he expected that I would drive in 33 seconds there. That's all up to the timekeepers. I'll drive as fast as any man ever did."

Only Horses May Soil 'Frisco's Streets.

When the ordinance requiring the attachment of suitable devices to automobiles, in order to prevent oil drippings being deposited on public streets, came before the San Francisco Board of Supervisors for final passage last week no difficulty was experienced in putting it through, and it is now a law.

Not satisfied with this, however, an ordinance was introduced prohibiting unnecessary or unusual noise to be emitted from the exhaust pipes of automobiles; it was referred to the street committee.

It was asserted in support of this ordinance that complaints have been made to the supervisors that the "chug-chugging" of motor wagons while standing by the curb has in many cases been very annoying. Especially has this been the case when the machinery has been permitted to run at full speed while the vehicle stood in the street in a residence section. The exhaust of a gasolene or steam engine, it is said, often makes such a loud noise that it annoys an entire neighborhood. This is particularly the case when such annoyance occurs late at night and when persons in the vicinity are sick.

It is contended that the power can be reduced so that the machinery will not make enough noise to be objectionable. In the bill submitted there is a provision that no machine shall stand on the street longer than five minutes with the engine working at full speed. After that length of time it will be obligatory on the chauffeur to reduce the speed of the machinery.

Col. Green's Record by Proxy.

Later advices from Dallas, Tex., give the information that Col. E. H. R. Green did not drive his Pope-Toledo when it won the 100-mile race there on January 2 in 2 hours 6 minutes and 42 2-5 seconds, as reported in last week's Motor World. The driver who piloted the machine on its long journey was Oliver Savin, who is one of Colonel Green's chauffeurs.

The fastest single mile was covered in 1:05 2-5. In the third mile, while passing another competitor, the Pope-Toledo struck a fence post and an axle cap was knocked off. Savin said he was forced to shut off power and skid around the turns. One of the tires blew up in the ninety-sixth mile, but the car finished the remainder of the distance without stopping to replace the tire. Col. Green's Pope-Toledo and Franklin car; a Peerless, owned by J. Howard Hughes, of Houston; A. B. Wharton's Columbia, from Fort Worth, and a Cadillac, owned by George Schofield, of Dallas, were the competing machines.

"Sockituem," say These Jerseymen.

For overpowering, undiluted "nerve" and brazen effrontery, a proposition made, apparently in good faith, by the freeholders of Middlesex County, N. J., is a long way in front. A committee of these freeholders will recommend to the legislature that a tax of $10 a year be levied upon non-resident automobilists for the use of the stone roads of the State, the money derived from such tax to go to the road appropriation!

FOR A CONSOLATION RACE

Frenchmen Can't Enter Enough Cars in Cup Contest and Provide for the "Also Rans."

Announcement was made last Friday that the French government had decided to permit the contest for the Grand Prix de l'Automobile Club de France, which is to be run in connection with the International Bennett Cup race over the Auvergnat course.

A Parisian daily newspaper, the "Auto," has come out with a novel plan to establish cash prizes for the makers of the first cars to finish in the Grand Prix de l'Automobile Club de France race. The paper has started a subscription for the purpose, and will itself give the maker of the victorious car a check for $20,000, while the total amount subscribed will be awarded to the makers of the second, third and fourth cars.

The race was established owing to the contention of the French manufacturers that it was unfair to France that entries in the International Cup contest should be restricted to three cars for each nationality. It will be open to all, regardless of country. It is reported from Paris that many of the French manufacturers are disinclined to enter the elimination trials for the International Cup on account of the great expense involved. The makers must pay an entry fee of $2,000 for each car entered, which entails an expenditure of from $2,000 to $6,000 for each manufacturer whose product competes in the trials.

The Auvergnat course, over which the two big races will be run in June, was used for the Tour de France race in 1899. It starts from Clermont-Ferraud, and the route passes through Rochefort, Bourglastic, Pontaumur, Pontgibaud and then back to Clermont-Ferraud, the course being in the province Puy de Dome. It is a very trying course, as there are many hills and several steep zig-zags. The total distance of the course is 135 kilometres. There are three railroads to be crossed, over which it is proposed to erect temporary viaducts.

The Rush to Register.

Beginning the day after Christmas, there was a small sized rush to register cars at Trenton, N. J. This sudden increase is ascribed to the giving of automobiles as Christmas presents. It brought the number of cars registered up to December 31 at the office of the Secretary of State to 7,820 automobiles of all types. This figure represents the entire number licensed to run on New Jersey roads since the approving of the State automobile law, March 23, 1903.

When the law was first passed the machines most registered were of the light runabout type. Steadily that type of machine has disappeared in applications for licenses being sworn to in the office of the Secretary of State, until now there are none being registered at all.

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Common Sense on Honolulu's Bench.

Honolulu's first trial of an automobilist for "furious and heedless" driving through the streets of that city ended with the discharge of the motorist by Judge Whitney, before whom the case was tried. C. W. C. Deering, a tourist visiting the island, had been arrested for driving his White steamer at a rate of speed which was considered excessive by the mounted patrolman who made the arrest. The trial aroused much interest among Hawaiian motorists, who were naturally much concerned with the outcome. Mr. Deering's arrest was the one referred to in the editorial of the Honolulu Bulletin, which was reprinted in the December 29 issue of the Motor World.

The trial was virtually a test to determine whether or not automobiles were amenable to the regulations provided for vehicles drawn by animals. Judge Whitney's decision was that under existing laws automobiles were exempt, as there was no statute regulating the speed of automobiles on the streets of Honolulu. Mr. Deering admitted that his machine had been travelling between twenty and twenty-five miles an hour, but added that he had it under perfect control and was exercising due care. He said that while such a rate of speed would be dangerous for crowded city streets there was no risk incurred on the open roads. If he had met any vehicles he could easily have avoided running into them.

In rendering his opinion and discharging Deering, Judge Whitney said that it appeared that the defendant had been going at a speed of between twenty and twenty-five miles an hour; that he was exercising care and that he was able at any time to avoid any obstruction that might have been in the road; he was not heedless in his progress, and the only point that remained to determine was in reference to the speed itself; inasmuch as there was no statute regulating the speed of automobiles, and inasmuch as there seemed to have been no furious or heedless driving, unless it could be called such merely because it happened to be twenty-five miles an hour, there was nothing in the evidence to prove a violation of Section 217 of the Penal Laws and the defendant was discharged.

Seattle Wants Fire Engines.

Out in Seattle, Wash., there are men who believes that automobile fire apparatus will supersede the horse drawn sort, and who take a radically different view of the questtian than Chief Edward Croker, of the New York Fire Department, who is anxious to use self-propelled engines, but cannot get around the side-slipping difficulty. At a recent meeting of the Seattle Board of Public Works, City Engineer Thomson suggested that the city take steps to install automobile fire apparatus. He stated as his belief that such a course would save money for the city, owing to the fact that the horses now used had to be replaced so often and at such a great expense. He also thinks they would give better service than the present horse drawn apparatus.

Binghamton Wrestles with "Chauffeur."

"A correspondent wants to know how to pronounce the word 'chauffeur.' Some people call it 'shofer,' some call it 'shawfewer,' John D. Rockefeller pronounces it 'chofer,' and we recently heard one lady talking volubly about her 'chaffer.' One unlettered, but ingenious fellow, has been known to refer to an automobile driver as a 'chiffoner,'" says the Binghamton Herald.

"The second pronunciation, with the accent on the 'fewer,' is about as near right as any of them, although some cultured people prefer 'shofer.' If you own an automobile and can hire a chauffeur you can pronounce it any old way, and those of your friends who are without a machine will in no single instance refuse to ride with you on that account. Some of them will even give you a hint that they think a ride in a motor car (that's English for automobile) would be just too delightful for anything.

"When you go to get your machine at the garage you should be very careful to state that you are on your way to the 'garrazzhe,' with the accent on the last half of the word. If you can't do that people will understand you if you say that you are going to the automobile stable, or the place where your whizz wagon is kept."

"Big Four" to Employ Automobiles.

Reports from Benton Harbor, Mich., have it that the "Big Four" railroad will soon install gasolene propelled railroad automobiles on its line between that city and Indianapolis. The competition of the interurban electric roads is given as the cause of the adoption of the gasolene machines. Other reports say the road will also use railroad automobiles between Danville and Urbana, in Illinois, and Elkhart and Indianapolis, in Indiana.

Motor Stage Line in Texas.

Daily passenger service was begun on New Year's Day by the automobile line between San Antonio and Pleasanton, Tex. The big machine, with its load of passengers, left San Antonio at 8 a. m., and arrived at Pleasanton at 10:25, the distance being between thirty and forty miles. The machine will carry the United States mail in addition to passengers.

Why New London is Proud.

New London, Conn., is crowing over the achievements of the automobile chemical engine of Niagara Engine Company No. 1. One night last week it was sent out with its crew of fifteen men, and, despite the snow covered streets, the machines climbed the steep hills without trouble. In addition to the fifteen men, the machine carried one thousand feet of hose.

No Trolley Tracks for Tampa.

Word comes from Florida that the promoters of the proposed streetcar line for Tampa will use gasolene passenger vehicles, if they succeed in obtaining a franchise. The first line is planned to be run from West Tampa to Ybor City, passing through the business district of Tampa on each trip.

Railroad Automobiles in England.

While not a few railroad automobiles are regularly run on various American railroads, both as standard equipment and as offsets to trolley car competition, railroad managers in England have not neglected the subject. In this country all of the machines are driven directly by gasolene engines, but in England for some time past the Northeastern Railway has had two rail automobiles in service, the motive power for which is supplied by a Wolseley gasolene engine, which drives a dynamo, thus generating electricity for the propulsion of the car. This gasolene-electric system, which has also been adopted in some types of motor driven omnibuses, promises good results, but it has the drawback of waste of efficiency through the transformation of power.

A light car, capable of seating thirty-two passengers, has been built by the Great Northeastern Railway Company, and equipped with two four cylinder gasolene engines of the Daimler type. This car was successfully run from Doncaster to London in September last, and since the 20th of that month it has been making experimental trips on the branch line between Hatfield and Hertford. As was only to be expected, a number of difficulties have been met with in regard to details of the machinery. These have been overcome, and the car is now running regularly on a nine-mile branch, making four round trips daily, but not carrying passengers.

A great feature of the Great Northern car is the lightness of its machinery, which weighs only two tons. It seems probable that more powerful engines will have to be installed in future vehicles of this type, so as to enable a trailing vehicle to be hauled when the traffic demands it. A capacity of thirty-two passengers is small even for a short country branch; moreover, it is very desirable that the rail automobile should be able to haul a horsecar or other non-passenger vehicle occasionally; otherwise a locomotive may have to be kept constantly in attendance.

The total weight of the Great Northern car is only eleven tons, as compared with an average of quite thirty tons for the steam and gasolene-electric cars, so that, even if the gasolene vehicle were to be doubled in size and power, it would probably still be lighter in proportion to its capacity than either of the other types.

Japanese Using Motor Wagons.

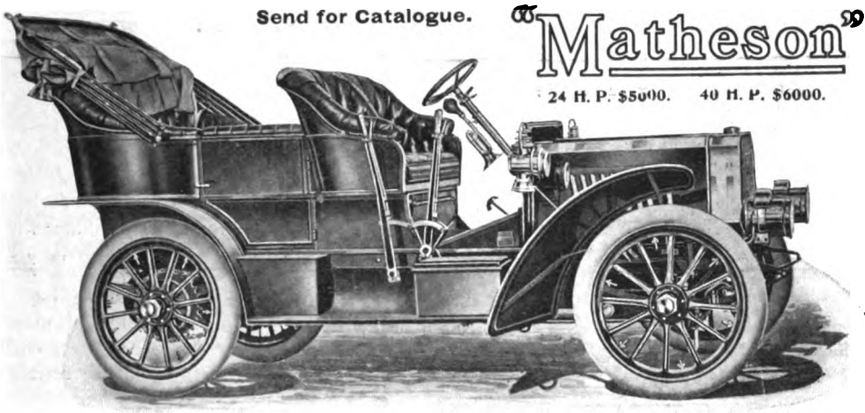
On more than one occasion have automobiles proved their value to both Russians and Japanese in Manchuria during the war. The roads in this vicinity are veritable mires and bogs, but when "Jack Frost" sets about his work the snow hardens and the roads become a practicable means of communication. Of this state of affairs the Japanese are taking full advantage, and are bringing up their provisions from their bases at Antung and elsewhere on motor wagon—at least that is the story that comes across the seas.

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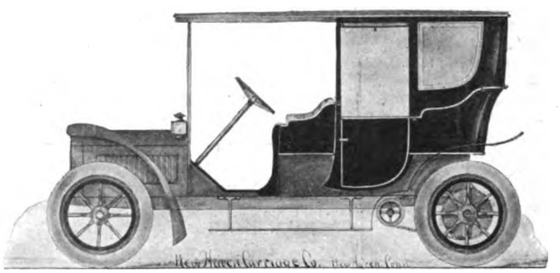
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Long Life—insured by using greater factors of safety in every vital part than ordinarily employed.
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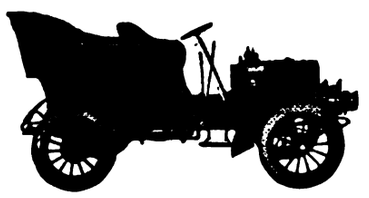
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Notice to the Public.

ALL USERS OF GASOLINE AUTOMOBILES AND ALL INTENDING PURCHASERS ARE HEREBY NOTIFIED:

That there has been a complete surrender by the Panhard & Levassor Company, of Paris, France, and the members of that corporation who represent it in New York City, to the rights of the Association of Licensed Automobile Manufacturers, under the Selden patent by the recognition of the validity of the basic U. S. Letters Patent No. 549,160, granted to George B. Selden, November 5, 1895.

A capitulation has been made also by the present American representatives of the Mercedes automobiles hereinafter named.

In the future all Panhard motor cars, brought into the United States by or through Panhard & Levassor, or Smith & Mabley, and all Mercedes cars brought in by Allen, Halle & Co., through their representatives, Smith & Mabley, all of New York City, will come in under licenses granted by the Electric Vehicle Company, of Hartford, Conn., under the Selden patent, with the authorization of the Association of Licensed Automobile Manufacturers.

Suits had been brought and vigorously prosecuted against the representatives of the Panhard and Mercedes cars for infringement of the basic Selden patent, No. 549,160, by the unlicensed importation of the cars named, and this surrender now clears the way for these makes of foreign cars to have license plates attached to them, when sold by or cleared through the parties named herewith.

The royalty on all Mercedes and Panhard cars heretofore brought in by the parties named since January 1, 1903, having been adjusted, Selden license plates will be furnished the present owners of such cars upon application to the agents.

The full list of licensed importers (who represent all the leading makes of foreign cars) from whom cars may be purchased, or through whom they may be cleared in any port of entry, without liability of suit for infringement of the Selden patent, is now as follows:

AUTO IMPORT CO.,	1786 Broadway, N. Y.
SIDNEY B. BOWMAN AUTOMOBILE CO.,	52 W. 43d St., N. Y.
THE CENTRAL AUTOMOBILE CO.,	1684 Broadway, N. Y.
HOLLANDER & TANGEMAN,	5 W. 45th St., N. Y.
F. A. LA ROCHE CO.,	147 W. 38th St., N. Y.
STANDARD AUTOMOBILE CO. OF N. Y.,	136 W. 38th St., N. Y.
SMITH & MABLEY, INC.,	513 7th Ave, N. Y.
PANHARD & LEVASSOR,	232 W. 13th St., N. Y.
WORTHINGTON AUTOMOBILE CO.,	547 5th Ave., N. Y.

All persons are now finally warned that suits will be brought against firms and individuals who import hereafter any gasoline automobiles, of any foreign make, through any entry port of this country, or who buy any foreign made gasoline automobiles not imported by, or cleared through, one of the licensed importers above named.

William A. Redding, Esq., attorney, of 38 Park Row, New York City, has been authorized to make adjustments with persons who have in the past unwittingly infringed the Selden patent by the importation or purchase of unlicensed foreign made automobiles, and who choose now to guard themselves against prosecution.

The American manufacturers now licensed under the basic Selden patent, No. 549,160, are:

APPERSON BROS. AUTOMOBILE CO. ..	Kokomo, Ind.
THE AUTOCAR CO.,	Ardmore, Pa.
BUICK MOTOR CO.,	Flint, Mich.
BUFFALO GASOLENE MOTOR CO.,	Buffalo, N. Y.
CADILLAC AUTOMOBILE CO.,	Detroit, Mich.
CREST MANUFACTURING CO.,	Cambridge, Mass.
THE COMMERCIAL MOTOR CO.,	Jersey City, N. J.
ELECTRIC VEHICLE CO.,	Hartford, Conn.
ELMORE MANUFACTURING CO.,	Clyde, O.
H. H. FRANKLIN MANUFACTURING CO.,	Syracuse, N. Y.
THE HAYNES-APPERSON CO.,	Kokomo, Ind.
THE KIRK MANUFACTURING CO.,	Toledo, O.
KNOX AUTOMOBILE CO.,	Springfield, Mass.
LOCOMOBILE CO. OF AMERICA,	Bridgeport, Conn.
NORTHERN MANUFACTURING CO.,	Detroit, Mich.
OLDS MOTOR WORKS,	Detroit, Mich.
PACKARD MOTOR CAR CO.,	Detroit, Mich.
THE PEERLESS MOTOR CAR CO.,	Cleveland, O.
THE GEORGE N. PIERCE CO.,	Buffalo, N. Y.
POPE MANUFACTURING CO.,	Hartford, Conn.
POPE MOTOR CAR CO.,	Toledo, O.
THE SANDUSKY AUTOMOBILE CO.,	Sandusky, O.
THE STANDARD MOTOR CONSTRUCTION CO.,	Jersey City, N. J.
THE J. STEVENS ARMS & TOOL CO.,	Chicopee Falls, Mass.
SMITH & MABLEY, INC.,	513 7th Ave., N. Y.
THE F. B. STEARNS CO.,	Cleveland, O.
STUDEBAKER AUTOMOBILE CO.,	South Bend, Ind.
E. R. THOMAS MOTOR CO.,	Buffalo, N. Y.
WALTHAM MANUFACTURING CO.,	Waltham, Mass.
THE WINTON MOTOR CARRIAGE CO.,	Cleveland, O.
WORTHINGTON AUTOMOBILE CO.,	547 5th Ave., N. Y.

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All druggists and opticians sell EYE-FIX at 50 cents. Ask for it and take no substitute. No other eye remedy in the world is like EYE-FIX, because no other remedy produces the same splendid results as EYE-FIX. A trial bottle for 10 cents will be sent you direct from our laboratory. Eye-Fix Remedy Co., Detroit, Mich. Dept. S.

The Week's Patents.

778,497. Pneumatic Tire or Other Tubular Flexible Article. Arthur H. Marks, Akron, Ohio. Filed March 31, 1904. Renewed November 10, 1904. Serial No. 232,132.

Claim.—1. In a tire-cover, a plurality of layers of fabric constructed and arranged so that the elasticity of each layer decreases beginning with the innermost layer, for the purpose set forth.

778,626. Steering Mechanism for Automobiles. Fred H. Bogart, New Britain, Conn., assignor to The Corbin Motor Vehicle Corporation, New Britain, Conn., a Corporation of Connecticut. Filed September 20, 1904. Serial No. 225,172.

Claim.—1. In a steering apparatus, a rotatable shaft, bearings therefor, a worm on said shaft, a plunger arranged parallel to said shaft, a rack on one side of said plunger engaging said worm, a second shaft and a link connected thereto and to said plunger.

778,627. Automobile Controlling Mechanism. Fred H. Bogart, New Britain, Conn., assignor to The Corbin Motor Vehicle Corporation, New Britain, Conn., a Corporation of Connecticut. Filed September 20, 1904. Serial No. 225,173.

Claim.—1. In an apparatus of the character described, a hollow shaft, a second shaft extending there through projecting below the lower end thereof, a sleeve mounted on the lower end of the hollow shaft and spirally movable thereon, a sliding connection between the said sleeve and said inner shaft whereby when the angular position of said snafts is varied the sleeve will be shifted longitudinally upon its support.

778,632. Engine. George C. Cannon, New York, N. Y. Filed November 5, 1903. Serial No. 179,933.

Claim.—1. A valve-operating cam, comprising a sleeve forming the body or main part, and reverse and ahead cam-sections spaced from each other on the sleeve, the reverse-section having essentially square or longitudinal shoulders and the ahead-section having one square or longitudinal shoulder and a triangular shoulder, the said reverse and ahead cam-sections being set opposite to each other.

778,653. Electric Battery. Arnold Gabrielson, Milwaukee, Wis., assignor of one-fourth to Ole H. Lee, Milwaukee, Wis. Filed July 21, 1904. Serial No. 217,457.

Claim.—An electric battery, comprising a zinc cup, coated with mercury on its inner surface, with a lining of paper soaked in dilute sulphuric acid, and filled with a mix-

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15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

1904 Tonneau Auto Car, canopy top and headlights; run less than 500 miles; A1 condition; $1,100. ARTHUR McNALL, 67 South ave., Rochester N. Y.

1904 Winton, practically new, three months' wear; perfect condition; canopy top, side baskets, $1200.00. T. H. PHELPH, Oklahoma City, O. T.

A MORE UNIFORM MIXTURE can be obtained by the use of our automatic air governor when applied to the Oldsmobile mixer. This means more power and speed. Easily attached. Not necessary to remove mixer. Sent upon receipt of price, $2.50. Circular upon application. MORE-POWER CO., Box 175, Lowell, Mass.

FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address, Room 403, First National Bank Building, Danville, Ill.

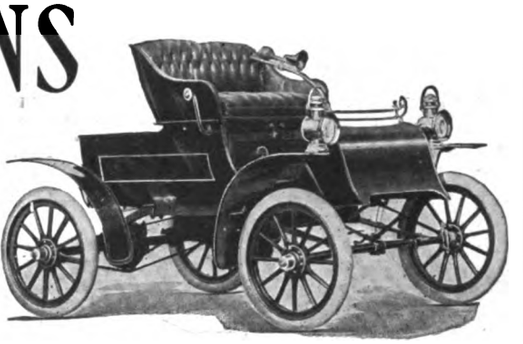
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Northern Touring Car, $1,700.


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ture of coke dust, powdered graphite and sal-ammoniac crystals, wet down with a potash solution, and sealed; a battery carbon supported by and within the filling mixture in said zinc cup; binding posts on the said cup and carbon, and an insulating covering around the said cup.

778,707. Igniting Device for Internal Combustion Engines. Fritz Reichenbach, Charlottenburg, Germany. Filed February 26, 1904. Serial No. 195,414.

Claim.—1. In a quick-running internal-combustion engine, the combination with the engine-shaft and the means for rotating it, of a fly-wheel, a magnet fixed thereto, an I-shaped stationary armature, formed with end pieces which are as long as the spaces between the ends of the poles of the magnet and completely bridge said spaces during the rotation of the magnet, a bobbin surrounding said armature, whereby the rotation of the fly-wheel will generate an electric current in said bobbin and there will be no air gap between the armature and magnet during the rotation of the magnet, and means for utilizing the currents thus generated for igniting the explosive mixture in the engine cylinder.

778,710. Steering Device. Joseph H. Robinson, Quincy, Mass., assignor to Frank Burgess, Quincy, Mass. Filed July 11, 1904. Serial No. 215,994.

Claim.—1. In a steering device for a motor-vehicle, a casing provided with a groove in its exterior and a bracket projecting into said groove fast to said casing and adapted to be fastened to the body of said vehicle.

778,768. Shoe Protector for Wheel Tires. Clifford A. Worthington, Trenton, N. J. Filed August 24, 1904. Serial No. 221,984.

Claim.—1. A shoe protector for automobile tires formed of rubber and canvas moulded into shape, and braced longitudinally by a thickened portion extending along the tread and thickened portion extending along each free edge and tapered downwardly along the end of the protector, the said ends being molded to a thin edge, and eyelets embedded in the reinforced longitudinal edges, the said canvas being exposed on the inner side of the shoe, substantially as described.

778,791. Axle for Automobile Vehicles. William S. Morgan, Russell, Minn. Filed February 11, 1904. Serial No. 193,155.

Claim.—1. In combination with a driving-shaft, comprising an intermediate section and end sections flexibly connected thereto for angular movement, an axle, comprising steering-knuckles forming flexible connections between the intermediate and end axle-shaft sections, and having inner and outer members provided with bearings for said axle-shaft sections, respectively, said bearings including removable members to facilitate the attachment and removal of the driving-shaft sections, bolts, pivotally connecting the inner and outer members of the steering knuckles together, trusses secured to and by said bolts and also to certain of the removable bearing members of the steering knuckles, and connections, independent of the axle-shaft, between the inner members of the steering knuckles, substantially as described.

778,810. Motor-Vehicle. Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass. Filed May 12, 1904. Serial No. 207,629.

Claim.—1. In an automobile, the combination with a vehicle frame comprising side bars, of an opposed cylinder engine frame arranged transversely to the vehicle frame, and hung by its cylinder portions from the under sides of the said side bars, thereby bracing the vehicle frame transversely and so mounting the engine as to give it a low center of gravity.

778,811. Motor-Vehicle. Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass. Filed July 6, 1904. Serial No. 215,460.

Claim.—1. In an automobile, the combination with a vehicle frame, of a dashboard, a carbureter supported by said dashboard, and a fuel supply tank located above the level of said carbureter and delivering fuel thereto by gravity.



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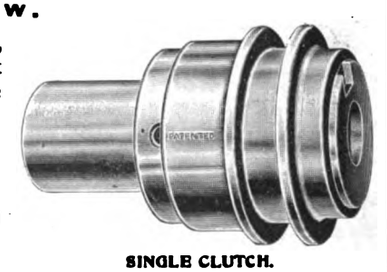


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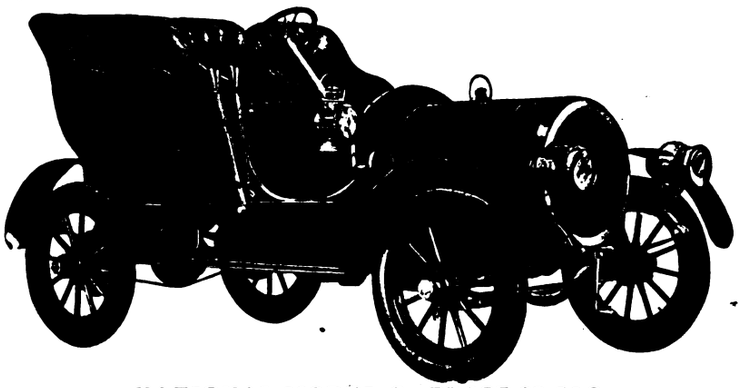
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HARTFORD, CONN.



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With NATIONALS You

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Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
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All weight taken off inner axle and differential.
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Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

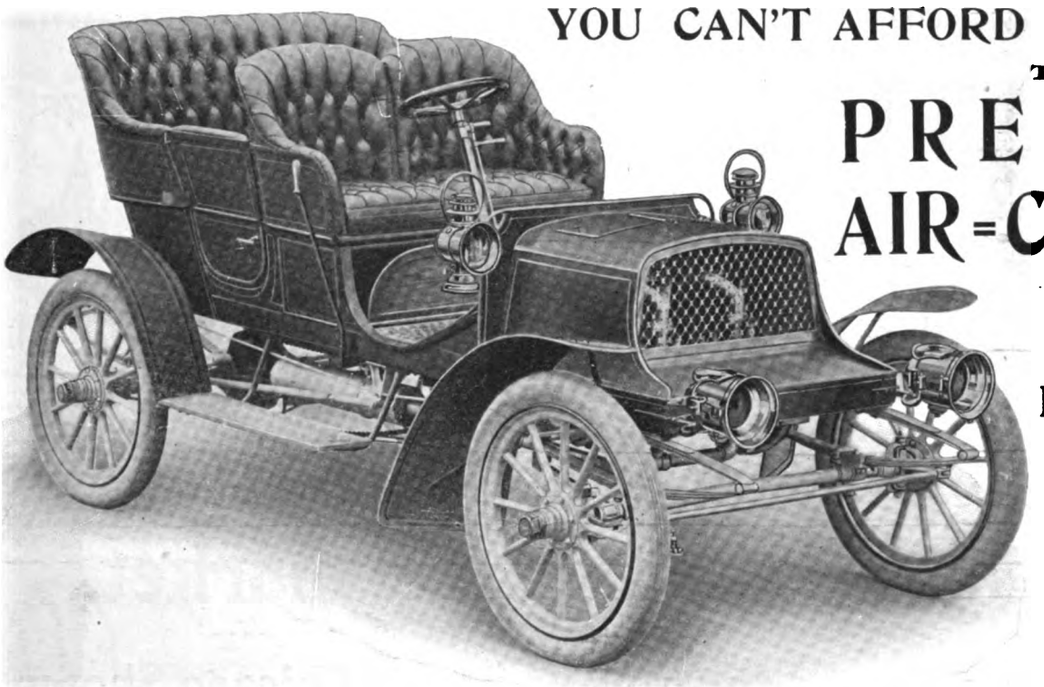
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at the

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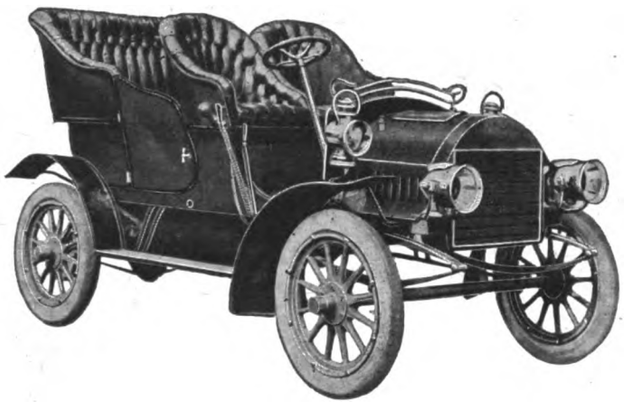
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16 h. p. (and lots to spare); weight 1750; speed, up to 45 miles.

Price, complete, - **$1,250**

Thoroughly Proven in 1904.

To Please the MOST People

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Construction, trimming and finish finest on any car at any price. Unique control system—every speed on direct drive without touching gear levers.

Big tonneau, with comfortable side entrances; double-opposed motor; full elliptic springs that make the Reliance the easiest riding American car regardless of price or reputation; wonderful hill climber; extremely quiet in operation.

100 CARS READY FEBRUARY 1. WE HAVE A SYSTEM OF GUARANTEEING DELIVERIES.

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SPLITDORF IGNITION

For 1905 surpasses everything heretofore seen in the market.

Look over our line at the New York and Chicago Shows.

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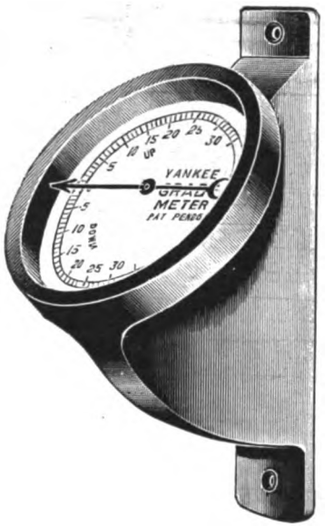
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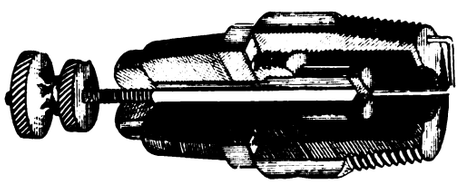
1905 Yankee Non-Vibrating Steering Wheel
Price, $10.00

Takes up all the vibration and at the same time has greater tensile strength for steering purposes than the old-fashioned wheel. Very ingeniously constructed. Write for descriptive circular.



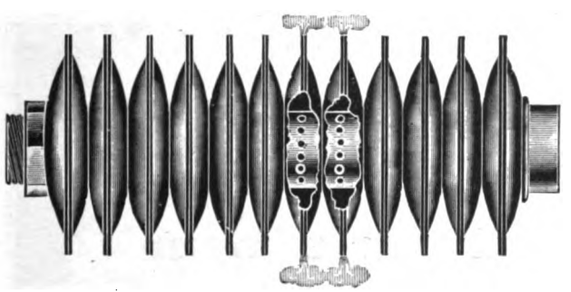
1905 Yankee Grade-Meter
Price, $7.50

This Grade-Meter is the handsomest article of its kind on the market and is positively accurate.
No vibrating of the indicating hand.



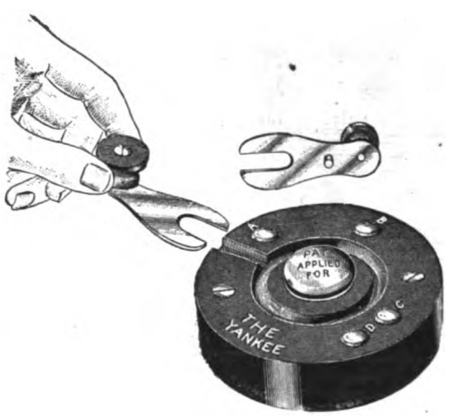
Yankee Mica Spark Plug
Closed End, $1.50 Open End, $1.00

Both guaranteed 90 days.
Thousands in use and no complaints.



Yankee Silent Muffler
Price, $6.00

Composed of 24 opposed disks enclosing escapement holes in exhaust pipe. Gas escapes through the thin outer edge of all the disks simultaneously.
The point of escapement is so many times larger than the bore of the exhaust pipe that there is no back pressure.
Equal distribution of the escaping gas over so long a line solves the muffler question.
Positively noiseless.



Yankee Cut-out Switch
Price, $1.50

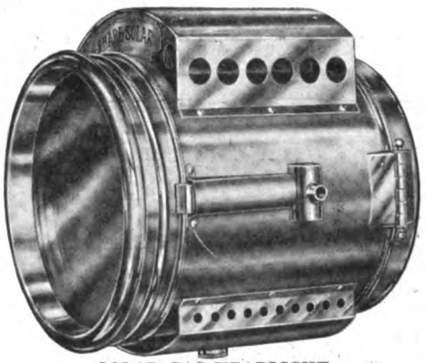
Switch blade instantly detachable which locks your car in your absence. Cannot be short circuited.
May use two sets of batteries, separately or alternately, or you may double your amperage at will.

WE ALSO MANUFACTURE

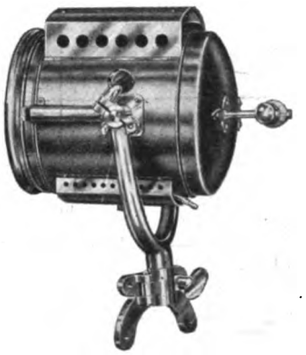
Quick Chain Repairers (sells for 50c.), Foot Bellows for Horn (sells for $3.00), Wind Shield, Price $7.50 (keeps dust out of back of tonneau), Battery Connections (sells for 36c. doz.), Repair Plasters, $1.00 each.
We manufacture 33 other Auto Specialties. Cuts furnished free to jobbers and dealers.
BIG FREE CATALOG. Discount to Manufacturers, Jobbers and Dealers.

E. J. WILLIS CO., 12 Park Place, New York

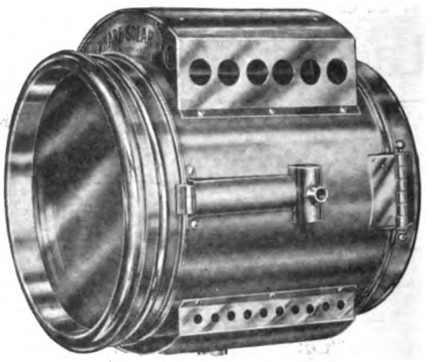
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SOLAR GAS HEADLIGHT.



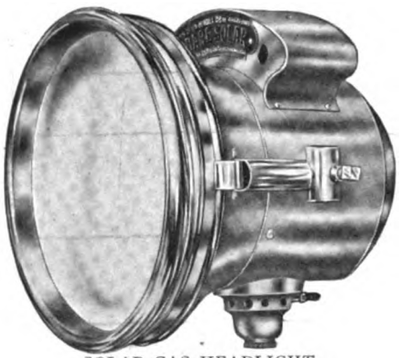
SOLAR SEARCHLIGHT.



SOLAR GAS HEADLIGHT.

SOLARS

ALL OF THEM



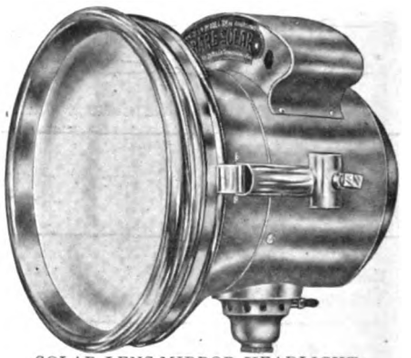
SOLAR GAS HEADLIGHT.

The Same That Won

The Gold Medal

AT THE

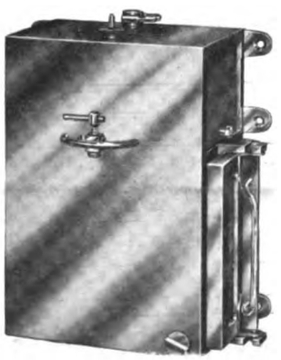
St. Louis Exposition



SOLAR LENS-MIRROR HEADLIGHT.

SATISFACTION

is the portion of all who use them



SOLAR GENERATOR.

BADGER

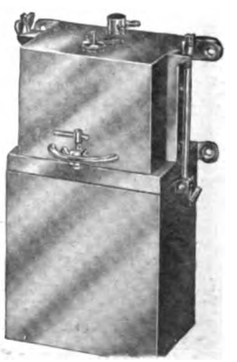
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KENOSHA, WIS.

Eastern Office: 11 Warren Street, New York

NEW YORK SHOW
Elevated Platform, Block X

CHICAGO SHOW
Space Nos. 212 and 218

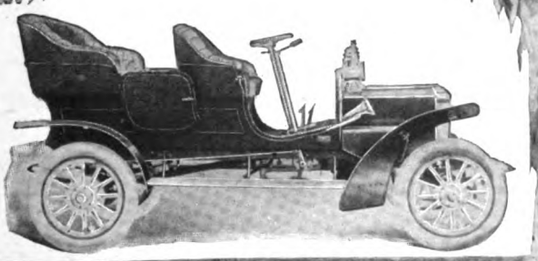


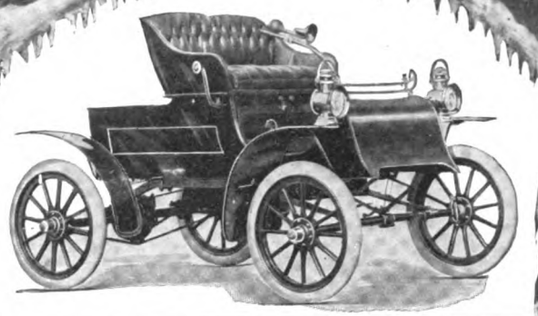
SOLAR DOUBLE GENERATOR.

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NORTHERN AUTOMOBILES

Good in all Climes





SILENT AS THE SNOW

is the operation of the Northern Touring Car. The plans of this superb vehicle called for the elimination of all noise and vibration, and every part has been carefully worked out with this end in view.

That the result aimed at is fully attained, the car itself proves.

THE NORTHERN TOURING CAR IS THE QUIETEST, EASIEST RUNNING CAR IN THE WORLD.

The motor is a 5¼x5¼ two-cylinder of the opposed type, developing ample power to take the car anywhere an automobile can go. Wheel base is 100 inches, with wheels fitted with 30x4 detachable tires. Choice of four different bodies. **Two-passenger** body, a powerful, speedy machine, **$1,500. Four or five passenger,** rear entrance, **$1,600,** and **four or five passenger,** side entrance, $1,700; and, lastly, a superb Limousine body, **$2,500.** All styles interchangeable.

WRITE FOR CATALOG 16.

THE "STURDY NORTHERN" RUNABOUT

long ago justified its name. With ample reserve power, strongly built and with body hung on swivel entirely independent of the frame, rough roads and smooth roads are alike, so far as riding qualities go. Its record in the hands of thousands of users all over the country proves its durability and efficiency under all conditions.

THE 1905 NORTHERN RUNABOUT, grown in everything except price, embodies all the features suggested by experience and the advancement of the art of automobile construction. Among the improvements are new body design, larger fenders, larger oil cups, full back moulded seats and numerous detailed refinements of working parts.

Largely increased facilities make it possible to now offer this sturdy, ideal **"Runabout" at $650.**

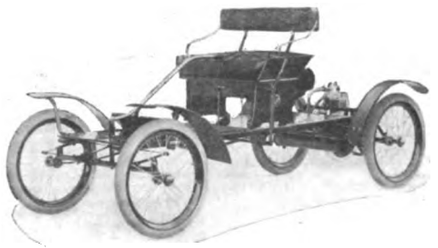
It will pay you to get in touch with NORTHERN Automobiles.

NORTHERN MANUFACTURING Co.

DETROIT, MICHIGAN.

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FIFTY DOLLARS LESS.



BUCKBOARD, $375.



SURREY, $450.



RUNABOUT, $475



TONNEAU, $525.

The price of the Orient Buckboard, Model, A, is $50 less this year than it was last.

Our dealers sold thousands of these cars last year, at $425. This year the price is only $375, and the car is better and faster than ever. There is no doubt that thousands of dollars can be added to your gross sales if you carry the Buckboards.

The thing to consider is that there is nothing else like them, and that there is a big demand for them.

They are as simple as a bicycle, dependable as steel beams, speedy as a 40-Horsepower Touring Car, and cost so little to buy and maintain as to put them within everybody's reach.

Get our superb color catalogue—the handsomest ever issued and by a new process.

WALTHAM MANUFACTURING CO.,

Members of Association of Licensed Automobile Manufacturers.

Sales Office for New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida and Georgia.

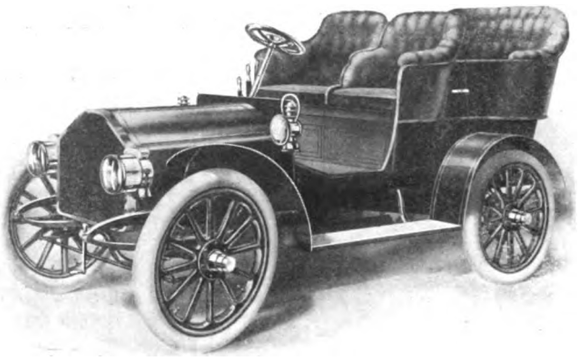
44 Broad St., New York City.

Factory and General Sales Offices:

WALTHAM, MASS.

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The Orient Touring Car Line.



Orient Light Touring Car with Tonneau, 16 H. P. Speed, 35 miles per hour. Price, $1650.

Name of Specifications.	Model E Touring Runabout, 16 H. P. $1500.	Model F Light Touring Car with Tonneau, 16 H. P. $1650.	Model G. Touring Car, 20 H. P. $2000.	Model de Luxe Touring Car, 20 H. P. $2250.
BODY	Runabout, semi-racing model.	Tonneau, entrance, swinging front seat.	Tonneau, double side entrance.	Tonneau, double side entrance.
SEATING CAPACITY	Two persons.	Five persons.	Five persons.	Five persons.
FRAME	Pressed Steel, tapering pattern.	Pressed steel, tapering pattern.	Pressed Steel, tapering pattern.	Pressed Steel, tapering pattern.
SPRINGS	34-inch front; 42-inch rear.	34-inch front; 42-inch rear.	40-inch front; 45-inch rear.	40-inch front; 45-inch rear.
COLOR	Same as 20 H. P. Cars.	Same as 20 H. P. Cars.	Body and hood olive green; gear red; black striping.	Body and hood olive green; gear red; black striping.
HOOD	Mercedes type; aluminum top; removable.	Mercedes type; aluminum top; removable.	Mercedes type; aluminum top; removable.	Mercedes type; aluminum top; removable.
TOTAL WEIGHT	1,350 pounds.	1,450 pounds.	1,650 pounds.	1,650 pounds.
WHEEL BASE	82 inches.	82 inches.	96 inches.	96 inches.
WHEEL GAUGE	Standard, 56 inches.	Standard, 56 inches.	Standard, 56 inches.	Standard, 56 inches.
WHEEL DIAMETER	30 inches.	30 inches.	32 inches.	32 inches.
AXLES	1¼ inch diameter; toughened steel.	1⅛ inch diameter; toughened steel.	1¼ inch diameter; toughened steel.	1¼ inch diameter; toughened steel.
TIRES	3½ inch International G. & J. pattern.	3½ inch International G. & J. pattern.	3½ inch International G. & J. pattern.	3½ inch International G. & J. pattern.
STEERING	Brass plated steel upright; wood rim wheel.	Brass plated steel upright; wood rim wheel.	Brass plated steel upright; wood rim wheel.	Brass plated steel upright; wood rim wheel.
BRAKES	Band and Emergency.	Band and Emergency.	Band and Emergency.	Band and Emergency.
GASOLINE CAPACITY	7 gallons.	7 gallons.	10 gallons.	10 gallons.
MOTOR	4-cylinder, vertical, tandem; positive air-cooled.	4-cylinder, vertical, tandem; positive air-cooled.	4-cylinder, vertical, tandem; positive air-cooled.	4-cylinder, vertical, tandem; positive air-cooled.
CYLINDERS	3¼ inch bore; 4¼ inch stroke.	3¼ inch bore; 4¼ inch stroke.	4-inch bore; 4¼ inch stroke.	4-inch bore; 4¼ inch stroke.
CRANK SHAFT	4-throw; 1⅛ inch diameter; 5 extra long bearings.	4-throw; 1⅛ inch diameter; 5 extra long bearings.	4-throw; 1¼ inches in diameter; 5 extra long bearings.	4-throw; 1¼ inches in diameter; 5 extra long bearings.
COOLING	Powerful, 4-bladed, ball-bearing fan.	Powerful, 4-bladed, ball-bearing fan.	Powerful 4-bladed, ball-bearing fan.	Powerful 4-bladed, ball-bearing fan.
FLY WHEEL	16 inches in diameter; weight 60 pounds.	16 inches in diameter; weight 60 pounds.	16 inches in diameter; weight 60 pounds.	16 inches in diameter; weight 60 pounds.
CLUTCH	Cone pattern; internal grip.	Cone pattern; internal grip.	Cone pattern; internal grip.	Cone pattern; internal grip.
IGNITION	Two 4-cell batteries.	Two 4-cell batteries.	Two 4-cell batteries.	Two 4-cell batteries.
TRANSMISSION	Sliding gear pattern; ball-bearing.	Sliding gear pattern; ball-bearing.	Sliding gear pattern in aluminum case; ball-bearing.	Sliding gear pattern in aluminum case; ball-bearing.
SPEEDS	3 forward and reverse.	3 forward and reverse.	3 forward and reverse.	3 forward and reverse.
COMMUTATOR	Latest French pattern.	Latest French pattern.	Latest French pattern.	Latest French pattern.
VIBRATOR	4-coil.	4-coil.	4-coil.	4-coil.

NOTE.—The de Luxe differs from the Model G in finish and upholstery. It is magnificently upholstered in hand-buffed leather, and the body finish is the finest that can be found in America or Europe. No car built is richer than the Orient de Luxe.

As you will observe, both our 16 Horsepower models are built on exactly the same lines as the more powerful cars, embodying the same superior engineering features.

They are the only motor-cars of 16 Horsepower (or less) which have 4-cylinder vertical tandem engines, direct drive, and sliding gear transmission.

The swinging seat on the $1650 car is not one of the cheaply built, hinged, tipping affairs. It is a regular Darracq type, swinging forward on a metal track—one of the fine features of this exceptional car. Both 16 Horsepower cars have three forward speeds and reverse.

Sales Office for New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida and Georgia.

44 Broad St., New York City.

WALTHAM MANUFACTURING CO.,

Members of the Association of Licensed Automobile Manufacturers.

Factory and General Sales Offices: WALTHAM, MASS.

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E. H. R. Green, President & Gen'l Manager, Texas Midland Railread, knews that

MORGAN & WRIGHT TIRES
ARE GOOD TIRES

Form No. 1864.

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Dallas Texas Jan 2nd 3rd 1905

Morgan & Wright

My pope toledo with your tires won one hundred mile race today in two hours six minutes and forty two seconds We are sending one of the tires back to show you how they finished in one hundred mile race.

E.H.R.Green 758.

QUALITY COUNTS.

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The Fastest Road Cars in the World of anything like equal power.
Hand Made Cars for a Few Good Customers.
Special Cars for Those Who Want The Best.

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Side Door Bodies. Limousine Bodies. Victoria Tops.
Collapsible Cape Tops. Full Leather Tops.

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Three Years Building Four-cylinder Cars.
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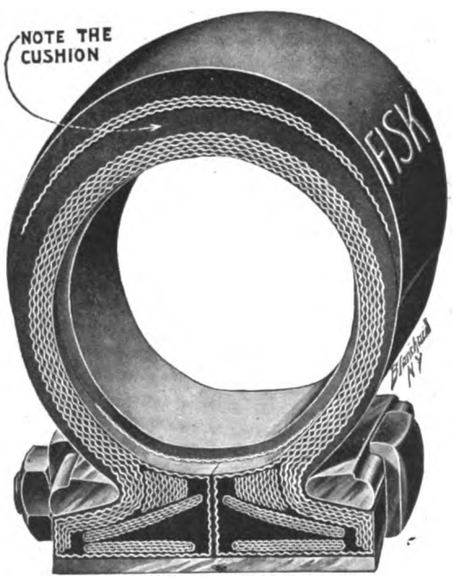
THEY ALL TOLD US

that the American trade and the American public would not pay the price of a truly high grade tire.

OUR ANSWER

was the

FISK HEAVY CAR TYPE TIRE,



which was made first and priced afterward.

It costs more than any other because it is worth more It represents the finest workmanship and the very best materials money can purchase Its success proves that just such a tire was wanted, particularly with such a fastening as goes with The Fisk.

The Fisk Rubber Company, Chicopee Falls, Mass.

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OUR NEW BOOKLET

will tell you many things about tires that are well worth knowing. Naturally it deals largely with the

FISK TIRE

and

ITS FAMOUS FASTENING,

but it treats the whole subject of tires in a manner that is full of information and instruction to automobile users. We will gladly send you a copy.

The Fisk Rubber Company, Chicopee Falls, Mass.

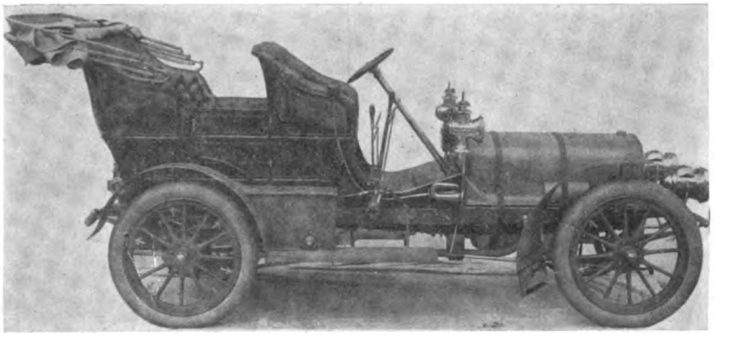
BRANCHES: New York, 754-756 Seventh Ave. Chicago, 52 State Street.

BOSTON, SPRINGFIELD, SYRACUSE, BUFFALO, DETROIT, SAN FRANCISCO, PHILADELPHIA, ATLANTA, ST. LOUIS, OMAHA, DENVER, [illegible] POLIS. LOS ANGELES. LONDON.

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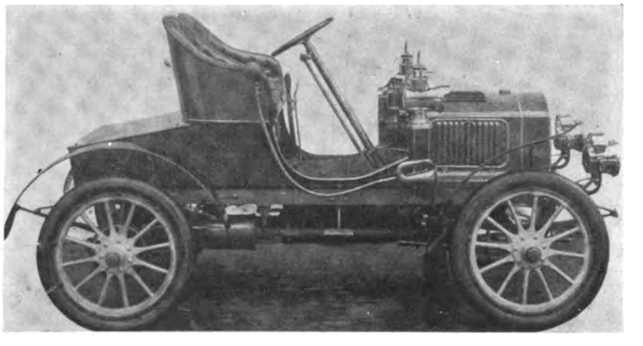
We got the Worst of it in Space Allotment.

WE'RE IN THE BASEMENT AT THE NEW YORK SHOW. BUT COME DOWN AND LOOK US OVER. IT WILL PAY YOU WELL.



Acme Type 8. Price, complete, as illustration, $2,750.

Four cylinder, 28 H. P., four speeds forward and reverse, sliding transmission, interlocking gear shift and automatic carbureter. Weight, 2,275 lbs.



Acme Type 10. Price complete, as illustration, $1,000.

Two cylinder vertical, 16 H. P., three speeds forward and reverse, slidng transmission, interlocking gear shift and automatic carbureter. Weight, 1175 lbs.

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Western Distributors.

ACME MOTOR CAR CO.,

Reading, Pa.

WE WILL EXHIBIT AT THE NEW YORK AND CHICAGO SHOWS.

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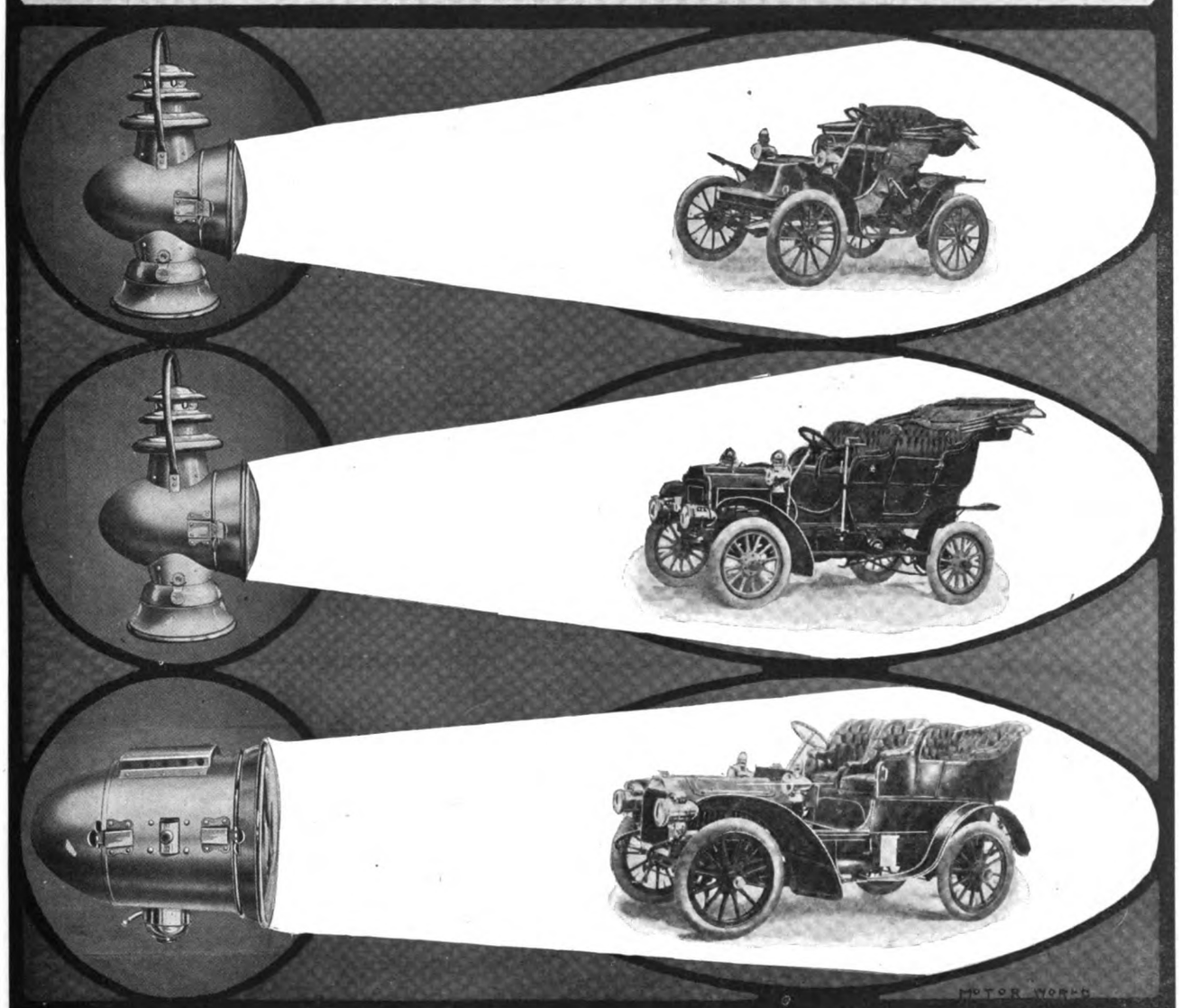
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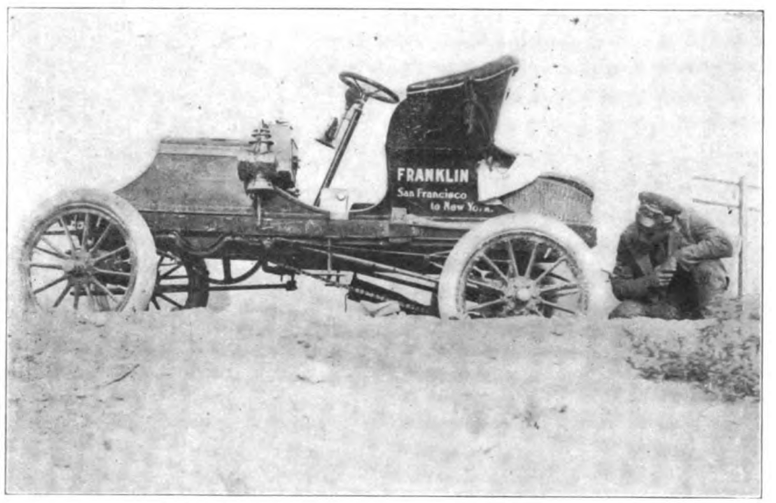
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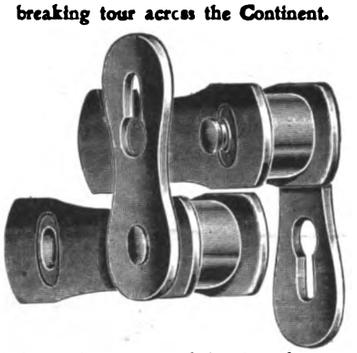


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Our new detachable chain cannot separate by accident nor when broken. It is as firm as a riveted chain.



BALDWIN Chains are Record Breakers. Used on Franklin Car during its record breaking tour across the Continent.



This Cut shows the position of the chain for separating it.

Our Riveted Chain for 1905 also has new features. There are no square edges for the sprocket tooth to wear against. They make for QUIET and SMOOTH RUNNING. THE BALDWIN WAY is the SMOOTH WAY.

For full description send for our Annual No. 7.

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Worcester, Mass.

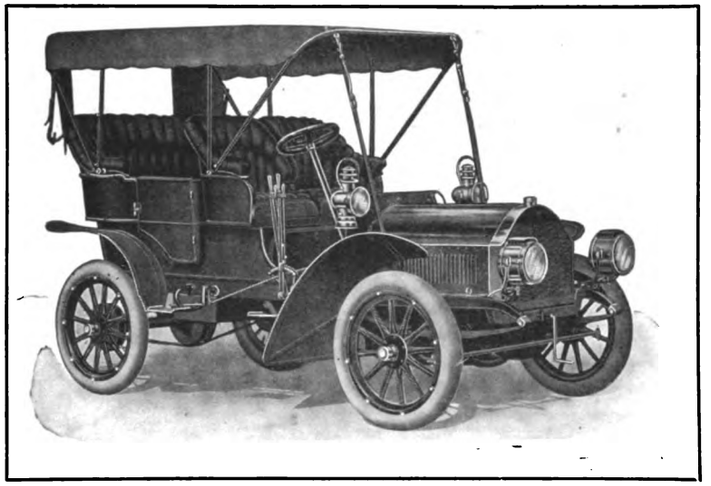
PETERSON & DRAPER,
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New 20-Horse Power, 4-Cylinder TOURING CAR *Model R.*

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Aluminum Body—Side Entrance Tonneau—Capacity, 5 Persons. Pressed Steel Frame—Three Speeds and Reverse—Three Brakes—Four Individual Cylinders—Bevel Gear Drive—Water Cooling—Standard Equipment—Weight, 1650 Pounds.

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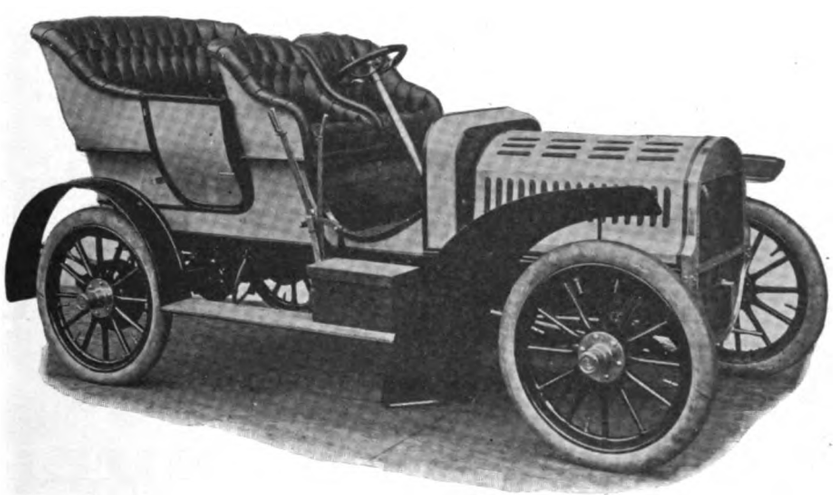
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ABOUT THE
Frayer-Miller Air-Cooled Car.

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Contains more ingenuity to the square inch than any car in the world.



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24 H. P.; 1,650 pounds.
Aluminum used wherever possible.

SIMPLEST.

No water tanks.
No radiators.
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MOST MECHANICAL.

Cooled by *Controlled* air.
Air when you want it and in proper volume.

These few points are merely a hint of the wealth of goodness incorporated in the most modern car ever built. See it for yourself at the New York Show, Exhibition Hall, Block A. We will be glad to explain the other good points in detail.

THE OSCAR LEAR AUTOMOBILE COMPANY, COLUMBUS, OHIO

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CADILLAC



THE

Best Guarantee

OF SATISFACTION IN THE FUTURE

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Performance of the Past



CADILLAC AUTOMOBILE CO.

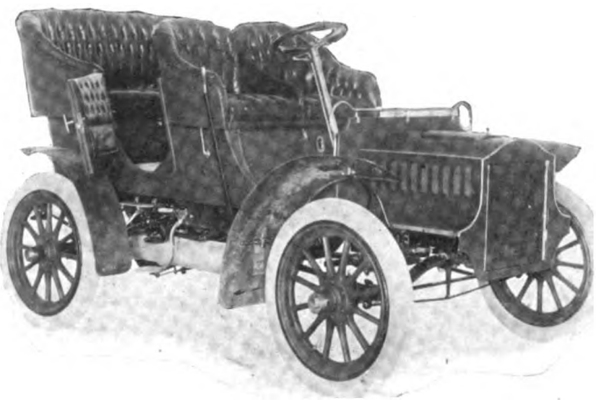
DETROIT, MICH.

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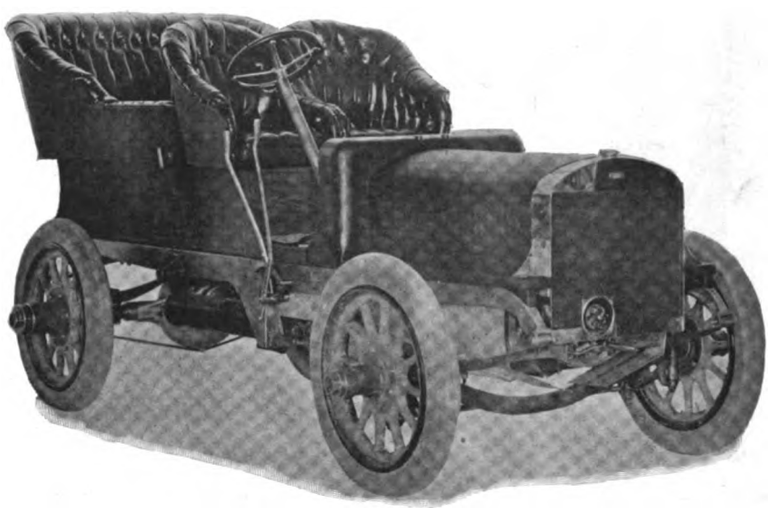
CADILLAC MODEL E, $750.

A high-powered runabout, designed for two passengers only, and can in no way be fitted with tonneau. Divided front seats. 28x3 tires. New type hood. Finish: Brewster green, primrose running gear. Option: Maroon body and running gear. Deliveries from January 15th.



CADILLAC MODEL F, $950.

Side entrance, non-convertible touring car. Divided front seats. New type hood. 3½ inch tires. 30 inch wheels. Finish: Brewster green, primrose running gear. Option: Maroon body and running gear. Deliveries from January 15th.



CADILLAC FOUR-CYLINDER VERTICAL MOTOR, 30 H. P., $2800.
(With aluminum body, $250 extra.)



CADILLAC MODEL E, WITH TOP, $800.

Same specifications as regular Model E. A superb two-passenger car for use in all kinds of weather.



CADILLAC DELIVERY WAGON, $950.

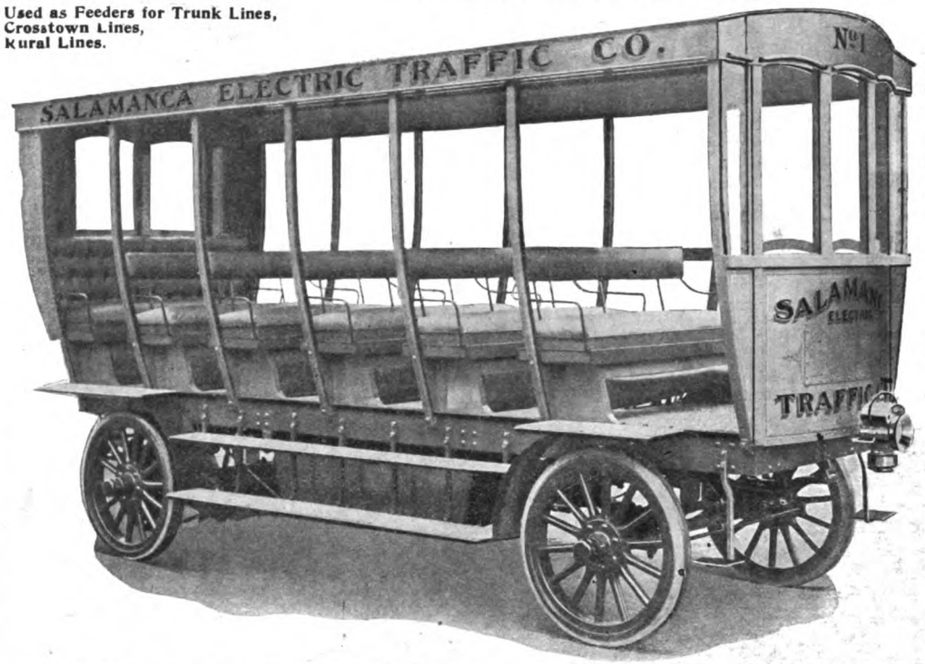
The Cadillac delivery wagon has been a commercial success from its very inception; used last year in many large cities, giving thoroughly satisfactory service. New model has largely increased carrying capacity. Will be a big seller. Immediate deliveries.

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TO MEET THE POPULAR DEMAND—1905.

THE AUTOMOBILE STREET CAR.

Used as Feeders for Trunk Lines,
Crosstown Lines,
Rural Lines.



Built by

The Auto-Car Equipment Company,

Makers of

Commercial Vehicles,

BUFFALO, N. Y., U. S. A.

Trucks, Delivery Wagons,
Omnibusses,
Sight-seeing Cars,
Trackless Trolley Cars.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

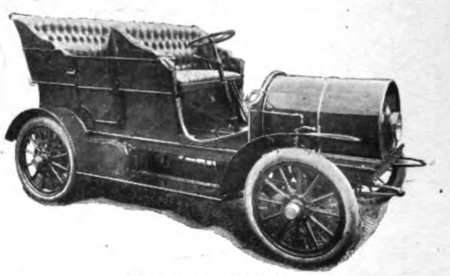
This new edition of this handsomely bound and artistically printed book, containing illustrations of about 125 gasolene cars, will be ready for mailing about Feb. 1st, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

The 1904 edition is now out of print.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.



PRICE, $1500.

THE NEW

GROUT

FOR 1905.

A few of the Leading features in construction and equipment that appeal to everyone interested.

Twelve H. P. horizontal engine, running in an aluminum case with new continuous oiling device, lubricating every moving part positively. 18" copper, wire bound, boiler of our own make, *thoroughly guaranteed.* New one piece case iron burner with noiseless pilot that cannot be extinguished by any wind. New throttling device in connection with perfected superheater. New fuel system that eliminates complication. Power, air and water pumps that run off countershaft and remove all illegitimate strain from the engine. Anti-Freezing device Car can be left standing in zero weather. Side chain drive. Internal expanding brakes of new construction. Automatic drought arrangement. Very long springs and most modern body hang up. The equipment includes full set of tools and parts in special tool case on running board. Large acetylene headlight and acetylene water glass lamp from one generator. Two side oil lamps, all of brass. Large horn and tube.

GROUT BROS. AUTO CO., 287 E. Main St., Orange, Mass.

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— THAT ETERNAL QUESTION —

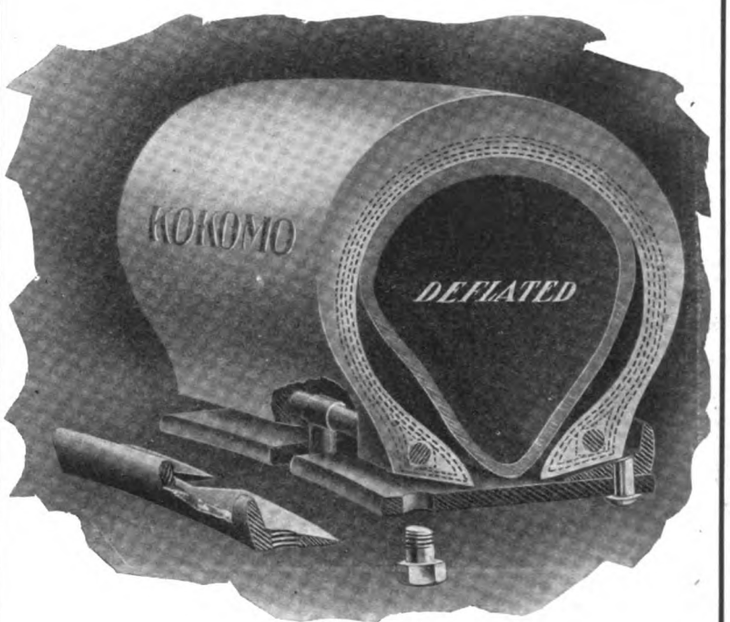
— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permittlng the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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"Swedoh" Spring Steel Rims

all bear this trade mark:

TRADE MARK

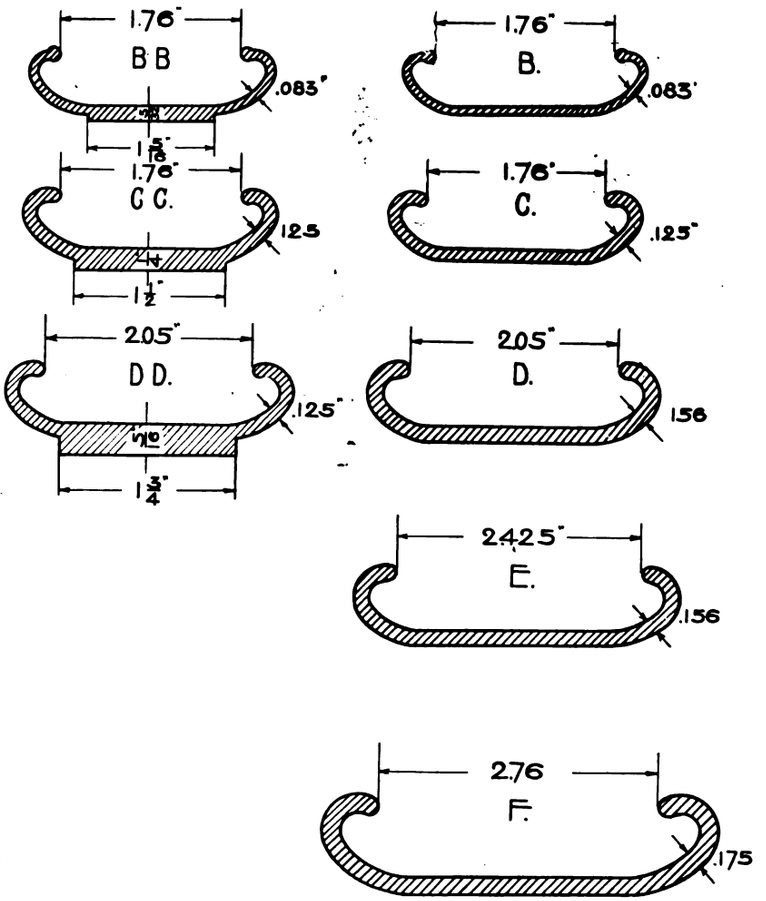
LABEL COPYRIGHTED.

The official stamp of approval of the tire makers denoting that **"Swedoh" Spring Steel Rims** fit all standard detachable tires

"TRUE AS ('Swedoh') STEEL"

has an added significance when applied to rims, meaning **A TRUE CIRCLE OF STEEL THAT STAYS TRUE.**
See that they are on all your automobiles.

Rims for Wire Wheels. **Rims for Wood Wheels.**



CLINCHER RIM MEASUREMENTS.

Size.	Rim Section.	Inside Diameter of Rims for Wood Wheels.	Diameter of Rims at Tire Seat for Both Wood and Wire Wheels.
26x2½ in.	B.	20.834 in.	21 in.
*28x2½ " interchangeable	"	21.834 "	*22 " interchangeable
*30x2½ " "	"	23.834 "	*24 " "
32x2½ "	"	25.834 "	27 "
34x2½ "	"	27.834 "	29 "
36x2½ "	"	29.834 "	31 "
26x3 "	"	19.834 "	20 "
*28x3 " interchangeable	"	21.834 "	*22 " interchangeable
*30x3 " "	"	23.834 "	*24 " "
32x3 "	"	25.834 "	26 "
34x3 "	"	27.834 "	28 "
36x3 "	"	29.834 "	30 "
26x2½ "	C.	20¾ in.	21 "
*28x2½ " interchangeable	"	21¾ "	*22 " interchangeable
*30x2½ " "	"	23¾ "	*24 " "
32x2½ "	"	25¾ "	27 "
34x2½ "	"	27¾ "	29 "
36x2½ "	"	29¾ "	31 "
26x3 "	"	19¾ "	20 "
*28x3 " interchangeable	"	21¾ "	*22 " interchangeable
*30x3 " "	"	23¾ "	*24 " "
32x3 "	"	25¾ "	26 "
34x3 "	"	27¾ "	28 "
36x3 "	"	29¾ "	30 "
28x3½ "	D.	20 11-16 in.	21 "
30x3½ "	"	22 11-16 "	23 "
32x3½ "	"	24 11-16 "	25 "
34x3½ "	"	26 11-16 "	27 "
36x3½ "	"	28 11-16 "	29 "
28x4 "	E.	19 11-16 "	20 "
30x4 "	"	21 11-16 "	22 "
32x4 "	"	23 11-16 "	24 "
34x4 "	"	25 11-16 "	26 "
36x4 "	"	27 11-16 "	28 "
28x4½ "	F.	18 21-32 "	19 "
30x4½ "	"	20 21-32 "	21 "
32x4½ "	"	22 21-32 "	23 "
34x4½ "	"	24 21-32 "	25 "
36x4½ "	"	26 21-32 "	27 "
28x120m-m & 5 in.	"	17 21-32 "	18 "
30x120 " & 5 "	"	19 21-32 "	20 "
32x120 " & 5 "	"	21 21-32 "	22 "
34x120 " & 5 "	"	23 21-32 "	24 "
36x120 " & 5 "	"	25 21-32 "	26 "
40x120 " & 5 "	"	29 21-32 "	30 "
		Circumference at Tire Seat.	
750m-mx 85m-m	D.	69 5-16 in.	
800 " x 85 "	"	76 1-32 "	
760 " x 90 "	"	70 3-16 "	
810 " x 90 "	"	76 in.	
870 " x 90 "	"	83¾ in.	
910 " x 90 "	"	88½ "	
1010 " x 90 "	"	101⅝ "	
820 " x120 "	F.	70 "	
850 " x120 "	"	74¼ "	
920 " x120 "	"	82¾ "	
1020 " x120 "	"	94 15-16 in.	

* Note that the 28x2½ and 30x2½ tires are made interchangeable with the 28x3 and 30x3 tires. m Millimetres.

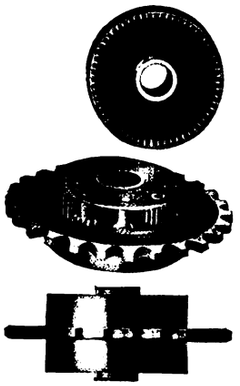
We also manufacture a complete line of **COPPERIZED AUTOMOBILE OILERS**—the kind that last.

AMERICAN TUBE & STAMPING CO.,

N. Y. Office, 258 BROADWAY. BRIDGEPORT, CONN.

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EQUALIZING.



GEARS.

BROWN-LIPE.

The reputation or our gears adds to the value of any car.

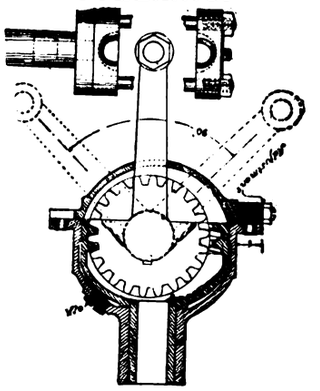
THOS. J. WETZEL, 11 Warren St., New York
PETERSON & DRAPER, 166 Lake St., Chicago } Direct Sales Representatives.

CHAS. E. MILLER, { 97 Reade St., New York / 318-20 N. Broad St., Philadelphia / 202-4 Columbus Ave., Boston } New York, Philadelphia and Boston Sales Agent, carrying stock.

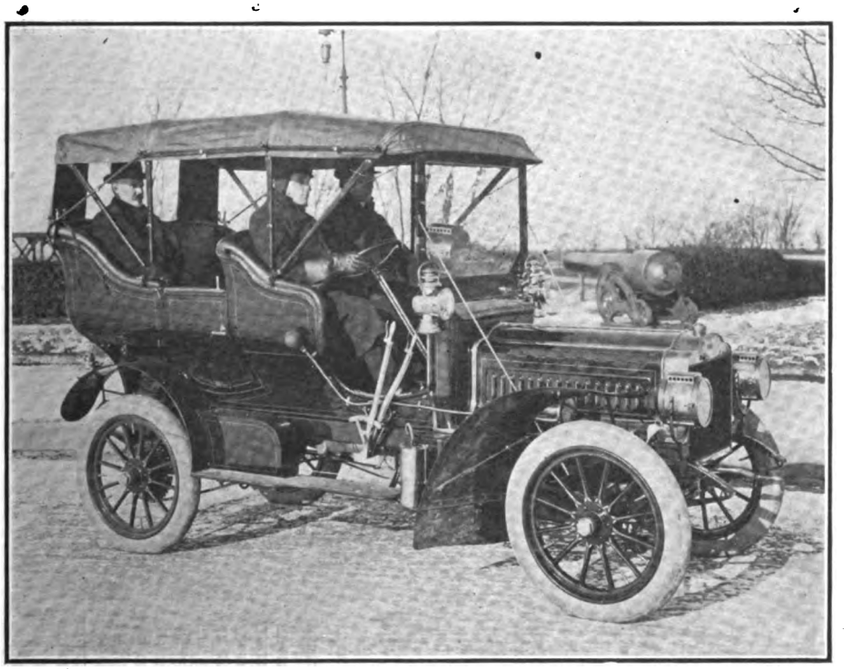
POST & LESTER CO., Hartford, Conn., Eastern Sales Agents.

BROWN-LIPE GEAR COMPANY,
204 S. Geddes St., Syracuse, N. Y.

STEERING.



COL. SPRAGUE'S CANOPIES.



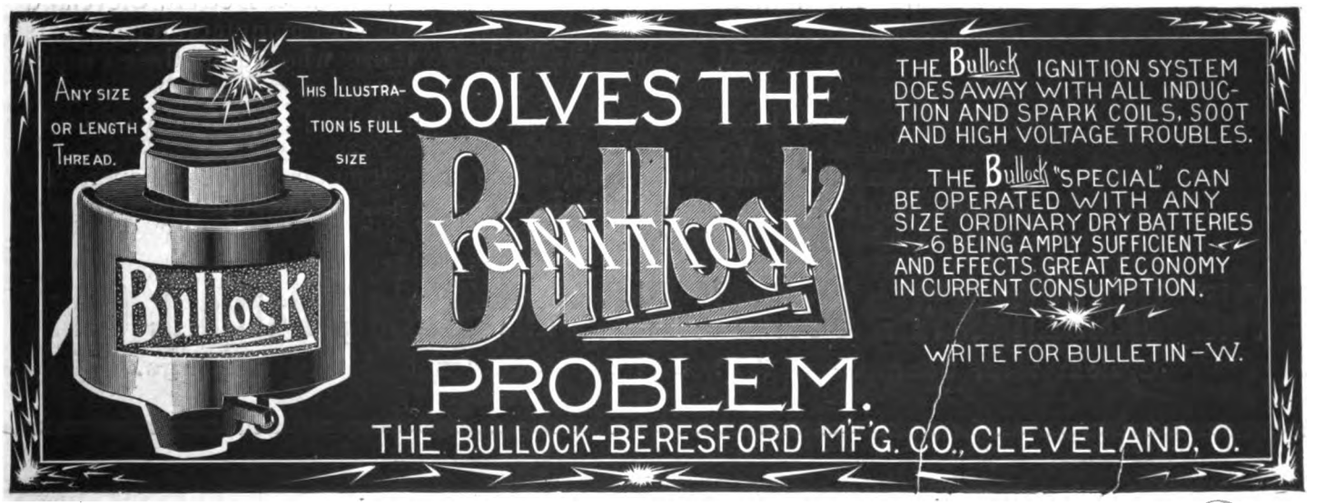
A Sprague Extension Top on a **"Thomas Flyer"**; recognized as the correct thing in tops.

See our Exhibit at New York, Chicago and Cleveland Shows.

Send for Catalogue.

The Sprague Umbrella Company,

Norwalk, Ohio, U. S. A.



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Pope Manufacturing Company,

Importers and Jobbers of

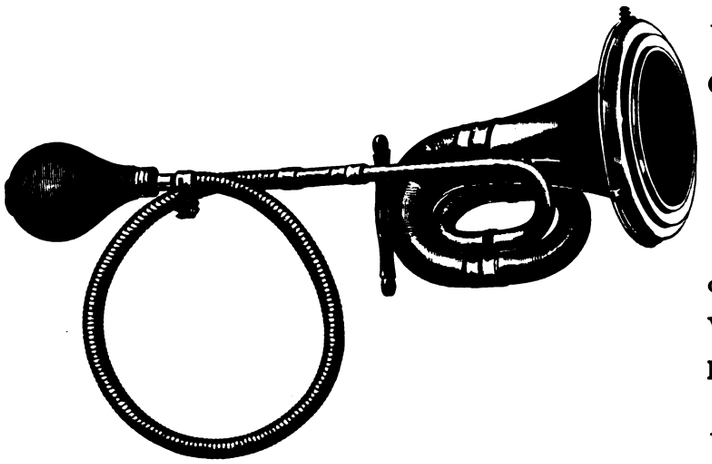
ACCESSORIES.

FRENCH HORNS. (No others.) } TONE. 35 STYLES, EACH THE BEST OF ITS KIND IN FINISH. APPEARANCE.

We have a buyer in Paris, and are in a position to secure the

BEST

that are made. This cut shows one style of very large, deep-toned horn.



Our line of Imported

HORNS AND GOGGLES

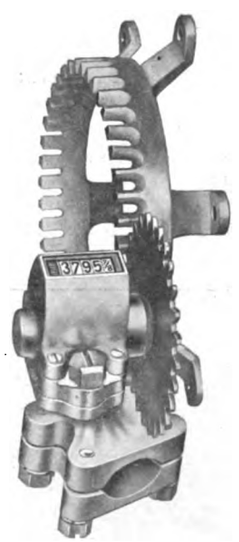
on view New York Show Week, at Hotel Victoria, Broadway and 27th St.

WE CARRY A COMPLETE LINE of Sundries, Supplies, Tools. Our facilities for the prompt shipment of orders are absolutely unexcelled. Our stock is large, varied and complete.

WE WANT THE NAME of every *DEALER and GARAGE* for our mailing list, and to send our 1905 100 Page Catalog.

EVERYTHING FOR THE MAN WITH THE CAR.

POPE MANUFACTURING COMPANY,
Eastern Department, Hartford, Conn.



Veeder

ODOMETERS FOR MOTOR CARS

will be on exhibition at our spaces at New York, Chicago, Detroit, Cleveland and Boston, where we shall be very glad to talk with manufacturers of cars concerning the special discount we make to those who equip their output with Veeder Odometers.

Dealers and jobbers are likewise invited to drop in at our booths to discuss the sale of Veeder Odometers for this year.

Automobile owners who wish to see the odometers in actual operation should feel perfectly free to come in and ask all the questions they choose. That is what we are there for.

THE VEEDER MFG. CO., 26 Sargeant Street, Hartford, Conn.

Cyclometers, Odometers, Tachometers, Counters and Fine Castings.

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By supplying the demand for a tire that would give assured service, the

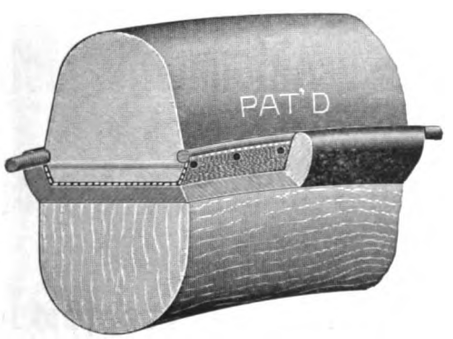
FIRESTONE SIDE-WIRE MOTOR TIRE

made possible the success of the Commercial Automobile of to-day, and is the recognized standard for this class of service.

Many of the best and most reliable Electric Pleasure Cars are equipped with Firestone Side-Wire Motor Tires know not of tire troubles.

Manufacturers of Gasoline and Steam Pleasure Cars, in recognition of the demand for a reliable, non-trouble giving tire, are designing models adaptable to

High Efficiency Firestone Side-Wire Motor Tires



The High Efficiency Tire marks another advancement in our efforts to meet the demand of the pleasure car owner. It has been carefully planned and tried out for this class of work. It will make its initial public appearance for favor at the New York Automobile Show.

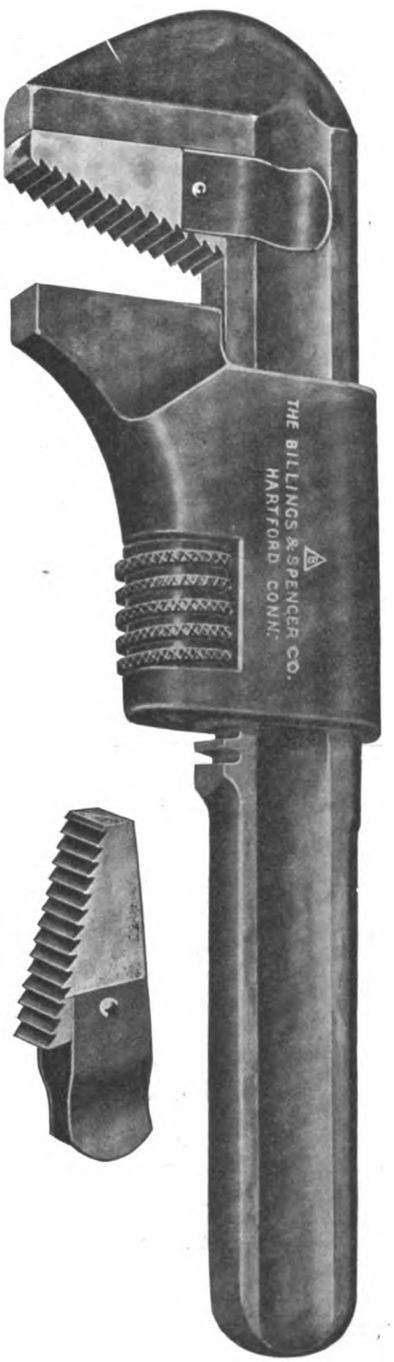
See our exhibit or write for information.

Firestone Tire & Rubber Co.,
AKRON, OHIO

1788 Broadway, New York
828 Arch St., Philadelphia
65 Beverly St., Boston
550 Wabash Ave., Chicago
2212 Olive St., St. Louis

A Wrench is a Wrench!
YOU SAY?

It is until it breaks, and then it is scrap!



The "B. & S." Auto Wrenches

are every part **Drop Forged** and are built to wear a lifetime.

There are 4 sizes: **8 in., 10 in., 14 in. and 18 in.**

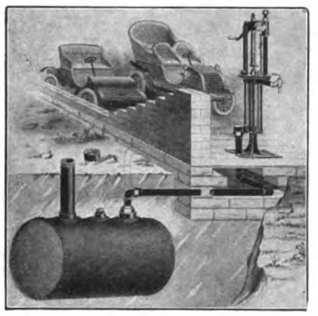
The cut shows 8 in. Wrench with Pipe Wrench attachment.

Send for Circular W.

The Billings & Spencer Co.
Hartford, Conn.

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BOWSER GASOLINE STORAGE OUTFITS



Pump discharges gallons, half gallons and quarts at a stroke.

FROM 7 DOLLARS UP.

The Name of "BOWSER" GUARANTEES QUALITY, DURABILITY, SAFETY and CONVENIENCE.

Our 20 years experience in the Tank business, and in designing Oil Storage Systems, enables us to present a line of Gasoline Storage outfits which will meet the requirements of any automobilist, both as to equipment and price.

OVER A DOZEN DIFFERENT STYLES FROM WHICH TO SELECT, VARYING IN PRICE ACCORDING TO STYLE, CAPACITY, ETC.

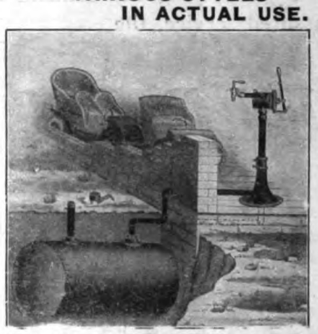
If you use, or contemplate using Gasoline, it will pay you to investigate.

A REQUEST FOR CATALOGUE XIV. WILL BRING FULL INFORMATION.

S. F. BOWSER & CO., Inc., - Fort Wayne, Ind.

Eastern Office: 255 Atlantic Ave., Boston, Mass.

200,000 VARIOUS STYLES IN ACTUAL USE.



A medium-priced outfit not of the self-measuring type.

Springfield Tops

For Runabouts, Tonneau and Side Entrance Cars.

ALUMINUM BODIES.

Aluminum Fenders, Hoods, Etc.



Top Attachments For All Cars.

Springfield Metal Body Company

366 Birnie Avenue, Brightwood, Springfield, Mass.

YOU TRY NO EXPERIMENTS WHEN YOU TRY OUR

PRESSED STEEL FRAMES.

The Leading Makers of the Industry Have Long Ago Proved Their Worth.

We Make Them from the Highest Grade of Cold Rolled Steel under Perfect Conditions of Manufacture.

Accuracy and Quality Guaranteed.

See Specimens at the Madison Square Garden (New York) Show, Section A, Concert Hall, or send drawings and get our prices.

CLEVELAND CAR SPECIALTY CO.,

CASE AVENUE and LAKE STREET, CLEVELAND, OHIO

DEALERS SEE THE MOTOR CAR SUPPLY CO. AT THE CHICAGO SHOW,

1427 Michigan Ave., Chicago.

The Best Automobile Motors AND Automobile Charging Machines

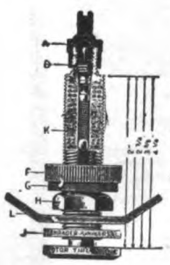
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THE ELWELL-PARKER ELECTRIC CO.,

CLEVELAND, O.

SCHRADER UNIVERSAL VALVE.

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SIMPLE AND ABSOLUTELY AIR TIGHT.

MOTOR TIRE VALVES, as shown in cut, are made in four lengths as shown. Cut is exactly half size of the 2 in. valve.

SUPPLIED TO THE TRADE BY ALL TIRE MANUFACTURERS.

MANUFACTURED BY

A. SCHRADER'S SON, Nos. 30-32 Rose Street, New York.

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Volier Horns

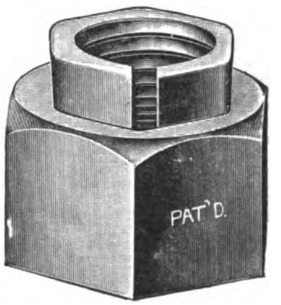


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The POST & LESTER CO., 36 Sergeant St., **Hartford, Conn.**

"The Cheapest Life Insurance"
IS WHAT
COLUMBIA LOCK NUTS

have been termed by one who knows their value. Use will demonstrate that the description was not misapplied.



NOT LIKE OTHER NUTS.

It is the *ONLY NUT* that can forever withstand the shocks and strains to which an automobile is subjected, Locks automatically and absolutely. Made in two units, it combines the three forces of wedge, screw and lever, forming a binding lock of immense power. Made in all sizes and is of universal applicati n. Write for prices.

COLUMBIA NUT & BOLT CO., - Bridgeport, Conn.

New York Office, 25 Broad Street.

YOU CAN SEE YOUR FINISH
WHEN YOU USE
FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

A big and profitable seller to all jobbers, dealers and garages.

OUR PROPOSITION IS INTERESTING.

Send us a trial order.

FISK MFG. CO., Springfield, Mass.

THE ONLY WAY

to build automobiles that will stand the test is to use sheet metal parts in place of castings.

WEDO HEAVY AND DIFFICULT STAMPING.

The Crosby Co.,

BUFFALO, N. Y.

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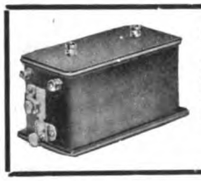
Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

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251 Jefferson Street, Detroit, Mich.



Jump Spark Coils

For all purposes—Single, Double, Triple and Quadruple for Stationary Engines and Automobiles. Guaranteed in every particular. Fine Vibrator.

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SOUTH BEND, IND.

QUINBY AUTOMOBILE-BODY DEPARTMENT

EMERSON BROOKS, Manager.
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TOURING CAR

THE F. B. STEARNS CO.,
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RADIATORS,

TANKS,
MUFFLERS,
FENDERS,
HOODS.

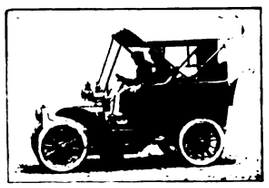


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Write us for printed matter on the NELSON STEAM WATER PUMP, the only positive high pressure boiler feed.

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104-110 Centre St., New York.



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PATENTS PENDING.
Aluminum Bodies
Aluminum Fenders
Aluminum Hoods.

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CHEAP MATERIALS.

In the South, Manufacturers of all kinds are in position to Assemble their Raw Materials Cheaply, while Exceptional Transportation Facilities place them in touch with all the Great Markets, North, East and West.

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Traverses Sections of the South which arh growing faster than any other part of the United States.

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— MAKE —
Automobile Chains, Sprockets, Spur and Bevel Gears.

Baldwin Chain & Mfg. Co.,
Worcester, Mass., U. S. A.

THE HILL PRECISION OILER

Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
832 Austin Ave., Chicago, Ill.

Non-Freezing Water Jacket Solution

(SOLVAY PROCESS CO.'S)

will stand 30° below Zero Fahr. without Freezing.

For sale by all Automobile Supply Houses.

THE CARBONDALE CHEMICAL CO., Carbondale, Pa.
NEW YORK, BOSTON, BALTIMORE, CHICAGO, PITTSBURGH

THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

MITCHELL MOTOR CAR CO.,
9 Packard Ave., Racine, Wis.

THE DUERR-WARD CO., No. 1787 Broadway, New York Distributors.

ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor.

Big Four Route TO St. Louis

"The Way of the World" to the

World's Fair

For information as to rates, hotels and boarding houses, address nearest Big Four Agent, or

WARREN J. LYNCH,
G. P. and T. Agent, Cincinnati, O.



THE GOODMAN COMPANY,
94-95-96 Tribune Building, New York.

Enclosed find $2.00 for which enter my subscription to

The Motor World

for one year, commencing with the issue of _____

Name _____

Address _____

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GRAY AND DAVIS

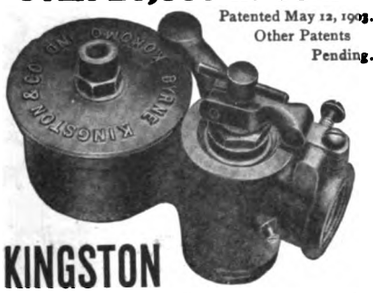
"Makers of Smart Automobile Lamps."

Be Sure YOUR CAR is Equipped With Them. **AMESBURY, MASS.**

Kingston Carburetor.

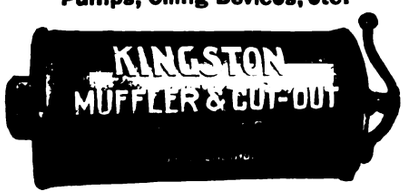
OVER 23,000 IN USE.

Patented May 12, 1903. Other Patents Pending.



KINGSTON

Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

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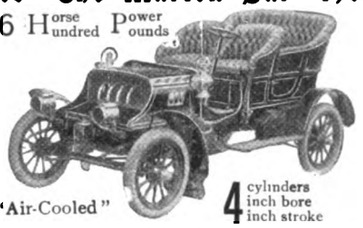
TRADE GRADOMETER MARK.

An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
THE ADAMS COMPANY, Dubuque, Iowa.

1905—The Marion Car—1905

16 Horse Power Hundred Pounds



"Air-Cooled" 4 cylinders inch bore inch stroke

A HIGH-GRADE TOURING CAR FOR $1,500.

Our Catalogue for the asking.

MARION MOTOR CAR CO.,
Indianapolis, Indiana.

WILEY TIRE CASE BAG

TIRE COVERS.

Best Goods. Lowest Prices.

Write for quotations and catalogue of other Auto Supplies.

The Wm. H. Wiley & Son Co.
Box 78. Hartford, Conn.

DON'T FAIL TO VISIT THE NATIONAL
Motor Boat and Sportsman's Show
Madison Square Garden
NEW YORK CITY
FEBRUARY 21st to MARCH 9th, 1905

THE CASE MFG. CO.

Send Us a Print or Sample of Some Special Parts on Which You Are Rushed and Let Us Quote Price and Delivery.

WE OFFER YOU THE SERVICE OF A MODERN PLANT MANNED BY EXPERT MACHINISTS.

THE CASE MANUFACTURING CO., Columbus, Ohio.

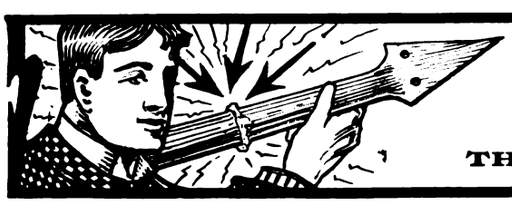
Send for Circular No. 8.

It you are going to build automobiles you will want this circular. It describes our Axles, Change Gears, Cone Clutches, Mufflers, Steering Gears and other standard parts. All of these parts have been designed with unusual care. They are suitable for cars of all classes.

FEDERAL MANUFACTURING COMPANY, Elyria, Ohio.

Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.

NEW YORK SHOW—Section "D," Concert Hall; CHICAGO SHOW—Gallery Spaces 241, 242, 243 and 244.



IT'S AWFUL EASY to finish work welded by
ELECTRICITY.

Can't we weld for you? Quotations cost nothing.

THE STANDARD WELDING CO., Cleveland.

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WHITNEY CHAINS

SEE THEM

ON MOST OF

THE LEADING CARS

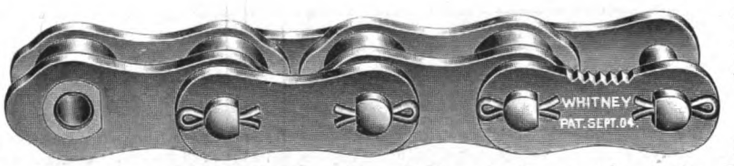
AT THE

New York Automobile Show



"WHITNEY" ROLLER CHAIN, RIVETED TYPE

All links on both sides are Riveted with exception of the one Connecting Link shown.



"WHITNEY" ROLLER CHAIN, COTTER DETACHABLE TYPE.

All links on one side are Riveted and all links on opposite side are Detachable. One link only is considered the Connecting Link, this being distinguished from the others by notches in the top surface.

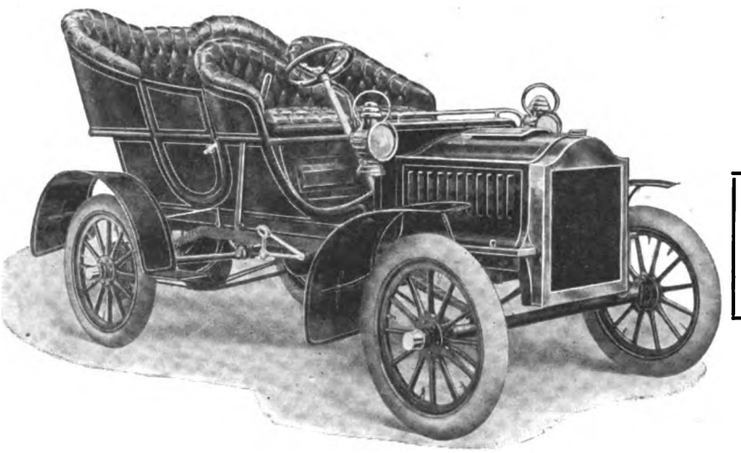
The Whitney Mfg. Co., Hartford, Conn.



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OLDSMOBILE

You see them wherever you go.



They go wherever you see them.

20 H. P. Touring Car. Price, $1400.

If you have followed the crowd at Madison Square Garden, and who hasn't, you have seen our exhibit.

You have examined the most complete line of light cars ever put on the market.

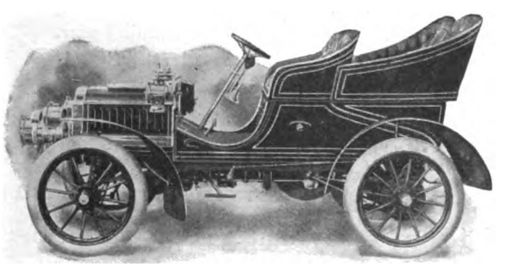
You have found the sensation of the show in our 20 H. P. 2 cylinder Touring Car.

In single cylinder cars you have found our Light Tonneau Car and Touring Runabout enjoying increased popularity from their successes of last year.

You have found our Standard Runabout, with its familiar curved front, the leading car in its class as of old.

In commercial vehicles you have found our Light and Heavy Delivery Cars the prime favorites of their class.

Altogether you have found convincing evidence that the Oldsmobile line will continue to be as in the past, the most thoroughly successful and the most vigorously exploited—the line in which there is always something doing.



Light Tonneau Car. Price, $950.

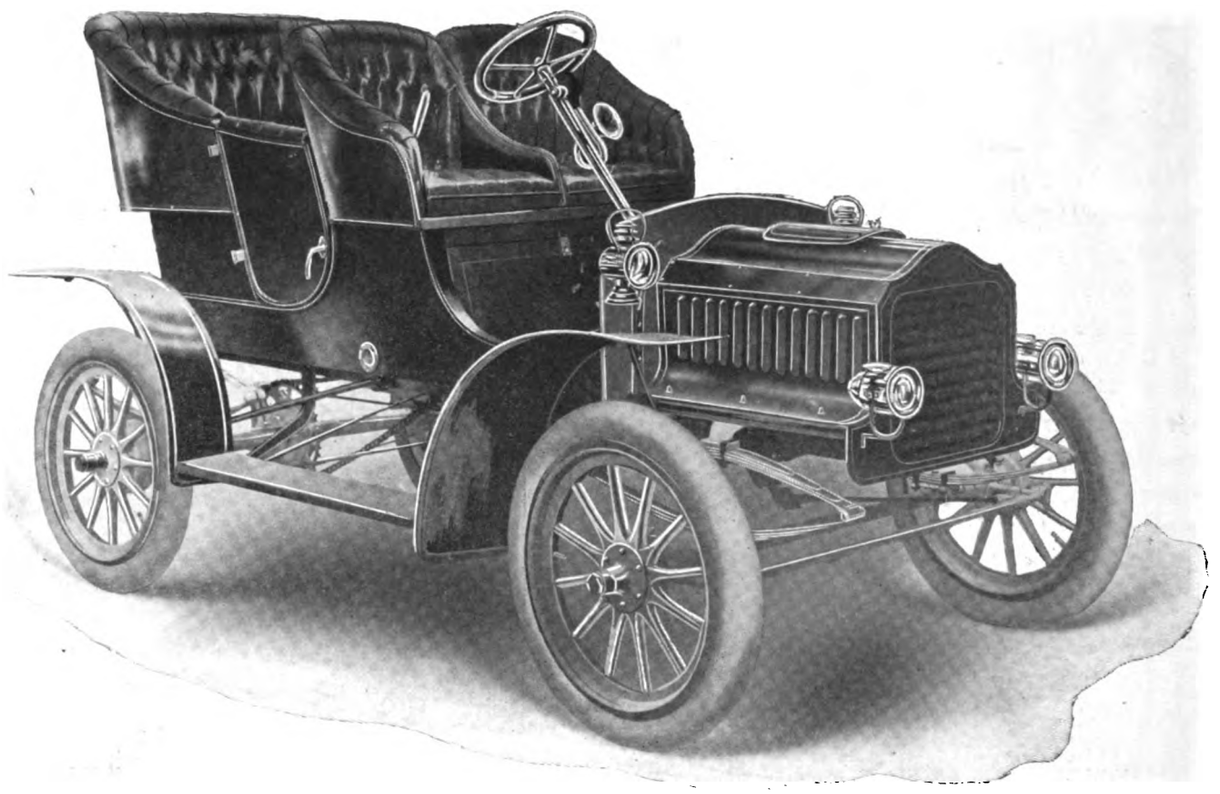


10 H. P. Delivery Car. Price, $1000.

OLDS MOTOR WORKS, - 1332 Jefferson Ave., Detroit, U.S.A.

Member of the Association of Licensed Automobile Manufacturers.

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FORD MODEL "F."

Model "F" has behind it the prestige of "Ford Success." It is designed for Automobile users who want a practical and useful touring car at a price which makes such a vehicle a profitable investment, rather than an expensive luxury. For actual reliability, attractive style and economy of maintenance, the Ford Model "F" is easily ahead of any two-cylinder car made.

SPECIFICATIONS OF MODEL "F."

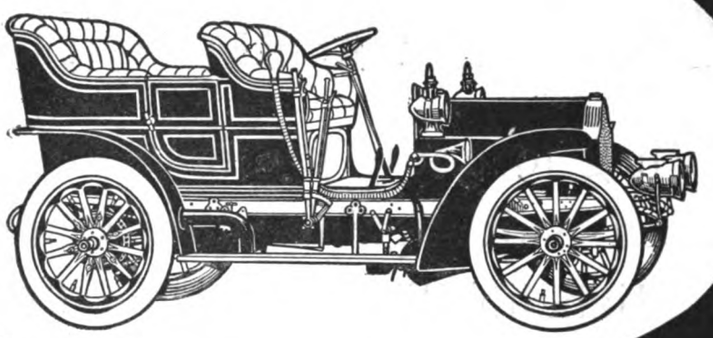
Price—$1200.00.
WEIGHT—1400 lbs.
MOTOR—Ford two cylinder horizontal opposed.
WHEEL BASE—84 inches.
TREAD—Standard wagon.
WHEELS—30 inches.
TIRES—3½ double tube optional.
MAXIMUM SPEED—35 miles an hour.
CAPACITY GASOLINE TANK—9 gallons.
CAPACITY OIL RESERVOIR—3 pints.
COOLING WATER CAPACITY—4 gallons.
COLOR—Rich dark green, yellow running gear.
UPHOLSTERING—Black, of best leather, handsomely tufted.
EQUIPMENT—2 side oil lamps, post horn and necessary tools.

We want our friends, critics and competitors to examine this car. Full information about all our 1905 cars is given in our new catalogue. Send for it to-day and get posted on the most advanced types of American Automobile Construction.

FORD MOTOR COMPANY, - Detroit, Mich.

Canadian Trade Supplied by Ford Motor Co. of Canada, Ltd., Walkerville, Ont.

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8 REASONS

WHY THE

Locomobile

Is Easily the Best Built Car in America

1.—Standard design. No freak features.
2.—Result of experience on proper lines.
3.—Special material for each part.
4.—All material analyzed and tested.
5.—Forgings used instead of castings.
6.—Every part made interchangeable.
7.—Careful attention given to minute details.
8.—Convenience of the Customer considered.

We have exhibited at all the Auto Shows held in Madison Square Garden. Our 1905 display at the Garden this week surpasses all previous ones.

Prices $2,800 to $8,000.

The *Locomobile* COMPANY OF AMERICA, Bridgeport, Conn.

NEW YORK—Broadway, corner of 76th Street
PHILADELPHIA—No. 249 N. Broad Street

BRANCHES

BOSTON—No. 15 Berkeley Street
CHICAGO—No. 1345 Michigan Avenue

Member Association Licensed Automobile Manufacturers.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

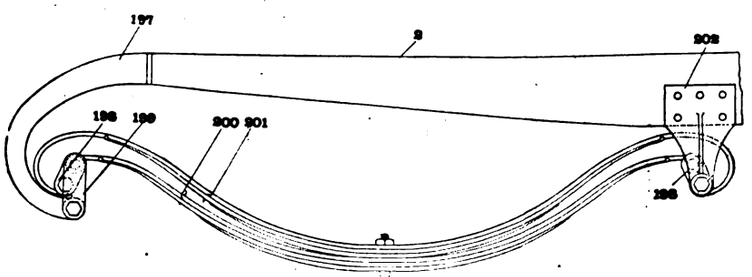
The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO.. Indianapolis, Ind.

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WINTON



Twin Springs—An Exclusive Winton Feature.

Automobile springs generally have one of two radical faults.

First.—Some springs are *so stiff* that they do not absorb the shocks of travel, but transmit them to the motor, greatly to its damage, and jar the passengers in a most uncomfortable manner.

Second.—Other springs are *so elastic* that the car bounds up and down, like a ship at sea, distressing the motor and the passengers alike.

The ideal spring, consequently, is one that combines *resistance* (stiffness) with *resilience* (elasticity), in such proportion that the motor sustains no shocks and the passengers travel in complete comfort.

WINTON *Twin Springs* alone possess this combination of merit.

Two four-leaf springs (200 and 201) are united in the centre and shackled at either end (198). They support the frame (2) by means of shackle (199), which is attached to spring horn, and spring plate (202).

Because of the *freedom of action* allowed by the shackles (198), the result, when car is used, is a *light spring* for light loads and good roads, and a *heavy spring* for heavy loads and rough roads.

The efficiency of these *Twin Springs* has been absolutely proved, not only by mechanical tests, but also by use on WINTON cars for *more than a year*.

Individual owners who have used them could not be persuaded to use any other kind. The comfort these *Twin Springs* provide adds a new delight to motoring.

Twin Springs are but one of *many exclusive features* to be enjoyed by Winton owners in 1905. Booklet No. 8 tells about the others.

Five Models—All with Four-Cylinder Vertical Motors.

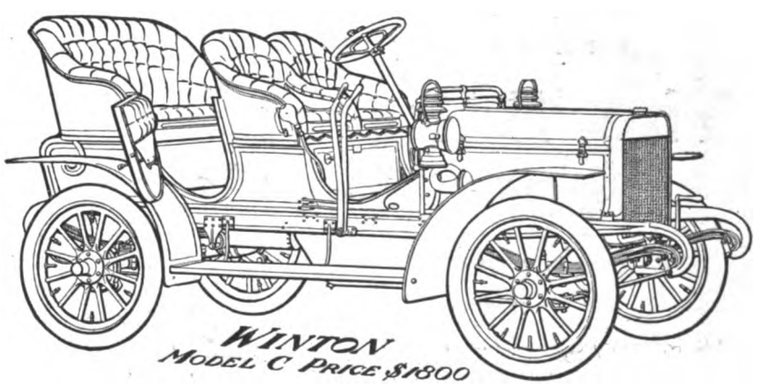
Model C, Side Entrance, 16-20 H. P., $1800

Model B, Side Entrance, 24-30 H. P., $2500

Model B, Limousine, 24-30 H. P., $3500

Model A, Side Entrance, 40-50 H. P., $3500

Model A, Limousine, 40-50 H. P., $4500



The Winton Motor Carriage Co.

MEMBER A. L. A. M.

CLEVELAND, O., U. S. A.

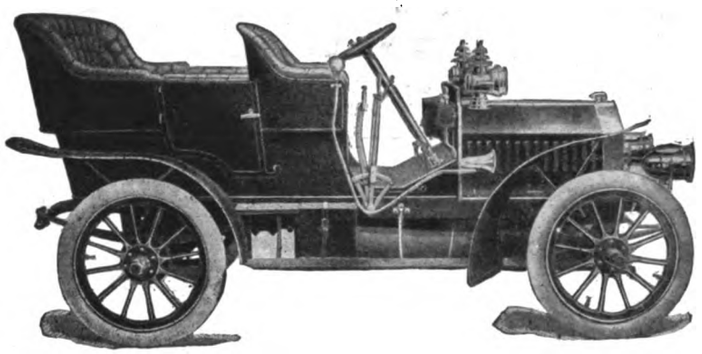
POLAR COMPOUND

Keeps water fluid at 10° *below* zero. One filling lasts all winter. 25c. per gallon, f. o. b. Cleveland. Shipping cans extra—5 gal., 50c.; 10 gal. 75c.

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THE "CLEVELAND"

A high-grade, light-weight touring car.



18 h. p. four cylinder vertical engine. **Price, $2,800.**

FEATURES:—91-inch wheel base; pressed steel frame; aluminum underbonnet; spark and throttle control on top of steering wheel; three-speed transmission with direct drive on high speed; mechanically actuated inlet and exhaust valves; jump-spark ignition; side door entrance.

We are establishing Agencies. Write for particulars.

CLEVELAND MOTOR CAR CO., ▪ ▪ CLEVELAND, O.

THE BAKER ELECTRIC

AT THE NEW YORK SHOW

WE EXHIBIT OUR LATEST PRODUCT,

The Baker Electric Depot Carriage,

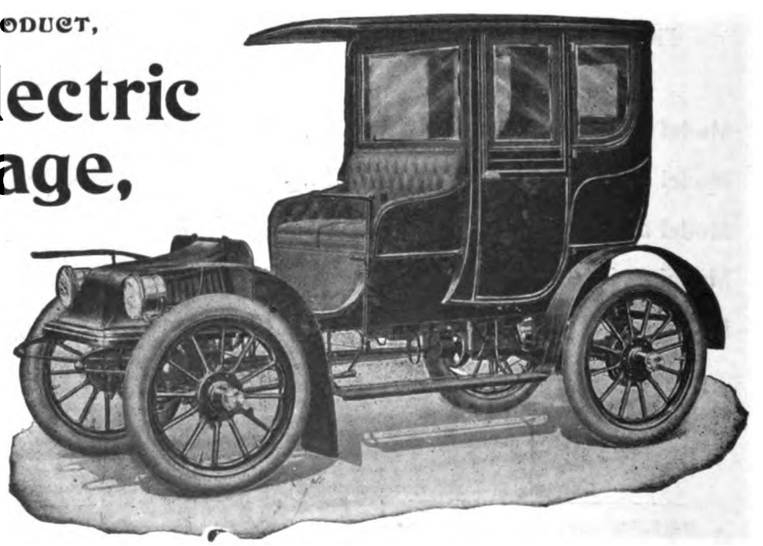
The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES,

SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.

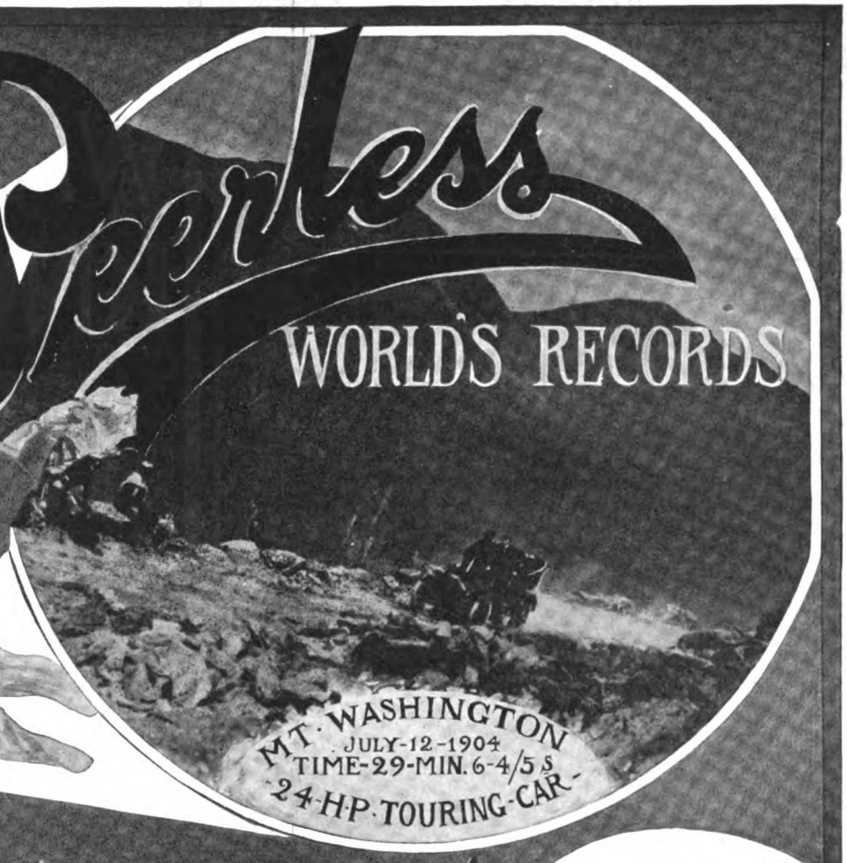


THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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Peerless

WORLD'S RECORDS





TRACK RECORDS
Made in 1904 by Barney Oldfield
in the
PEERLESS GREEN DRAGON.

Miles.	Time.
1	0:53
5	4:29
10	9:12 3-5
15	14:03 3-5
20	18:45 2-5
25	23:38 3-5
50	48:40 1-5

THE PEERLESS CAR
also holds all intermediate miles.



1905 MOTORS'
are of the same type as used in
PEERLESS "GREEN DRAGON"

These wonderful motors are governed and controlled so perfectly that they run smoothly, silently and, at will, as slowly as an electric, yet there is record making power and speed always in reserve.

Catalogue of New Models Sent on Request.

PEERLESS MOTOR CAR CO.,
CLEVELAND, OHIO.
Member A. L. A. M.



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1905 ANNOUNCEMENT

The Autocar

A NEW TYPE.

We believe that the Autocar in all its types represents the highest excellence in automobile design, workmanship and material. Every Autocar is built on honor. We feel, therefore, that our new type will meet with a cordial reception.

This car, **Type XI.**, larger and more powerful than the other types, has a four-cylinder vertical engine of 16-20 horsepower. The body is built on the newest and most approved French lines. The front seat is divided and both front and rear seats are large and comfortable.

While this car is built upon the tried Autocar principles which have been so splendidly proven, it shows a number of very important improvements making for increased simplicity, ease of operation, safety and comfort.

In fact, though Autocars have always been noted for absence of bewildering intricacy of mechanism, yet no one can but be impressed with the extreme simplicity of this new car. It is a triumph in scientific construction and arrangement.

This car has more than met our highest expectations in the road test. In fact, its performance has been a surprise to experienced automobile men. The power of the car carries it, fully equipped and loaded with five passengers up, tested 12 per cent. grades, for instance, at 20 to 25 miles per hour on the direct drive, while on the level the car attains a speed of 40 to 45 miles. The car is a superior climber on any hill.

Altogether our eight years' experience has enabled us to produce in this type, a four cylinder car we are assured cannot be surpassed by any similar car at any price.

The price of Type XI. is $2000. Ready for delivery January 16.

Type VIII.—Four-Passenger at ($1400,) and Type X.—Runabout at ($900,)

have made *Autocar Reputation.* Each stands at the head of its class for value and efficiency.

Autocars, Types VIII., X. and XI. will be on exhibition at the New York Automobile Show, Madison Square Garden.

Catalogue descriptive of the 1904-05 types will be sent free upon request. This catalogue contains also addresses of our dealers throughout the country who will be glad to give demonstrations to prospective automobile purchasers and explain in detail the merits of our cars.

THE AUTOCAR COMPANY,
Ardmore, Pa.

Member Association of Licensed Automobile Manufacturers.

The Reliable

WATERLESS KNOX CARS

FOR 1905.

HIGHER IN QUALITY.



Superb in Style and Finish.

The Knox 1905 two-cylinder (air-cooled) machine is as quiet and as smooth working as any four-cylinder machine, with only half its complications.

14-16 H. P. Side-door Tonneau, -	**$1900**
14-16 H. P. Convertible Surrey, -	**1750**
14-16 H. P. Folding Front-seat Runabout,	**1500**
Single Cylinder Folding Front-seat Runabout,	**1250**

1905 Models will be on exhibition at the New York and Chicago Automobile Shows.

Knox Automobile Co.

SPRINGFIELD, MASS.

Member Association of Licensed Automobile Manufacturers.

Selling Agents in all Principal Cities.

Waterless Knox Automobiles awarded GRAND PRIZE at Louisiana Purchase Exposition.

Will exhibit at the Automobile Show, Madison Square Garden, New York, Jan. 14th to 21st, 1905.

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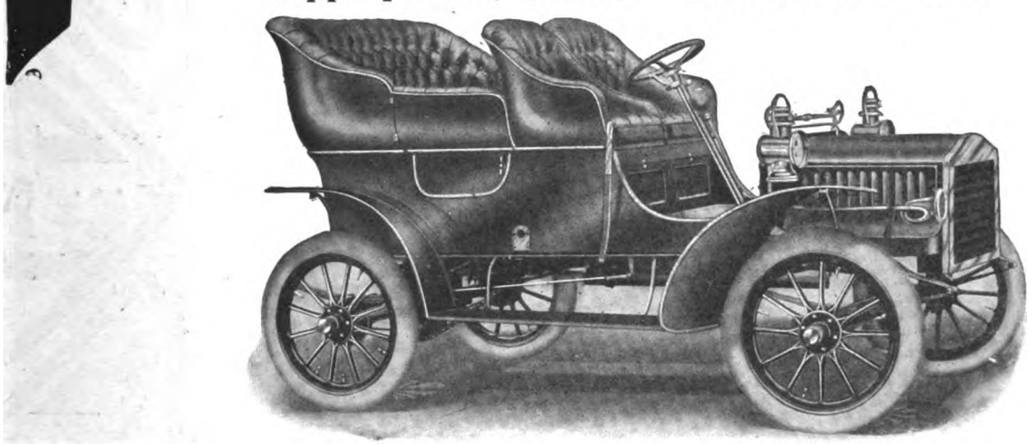
THE MICHIGAN

Two Models—"E" and "D."

Light Touring Cars

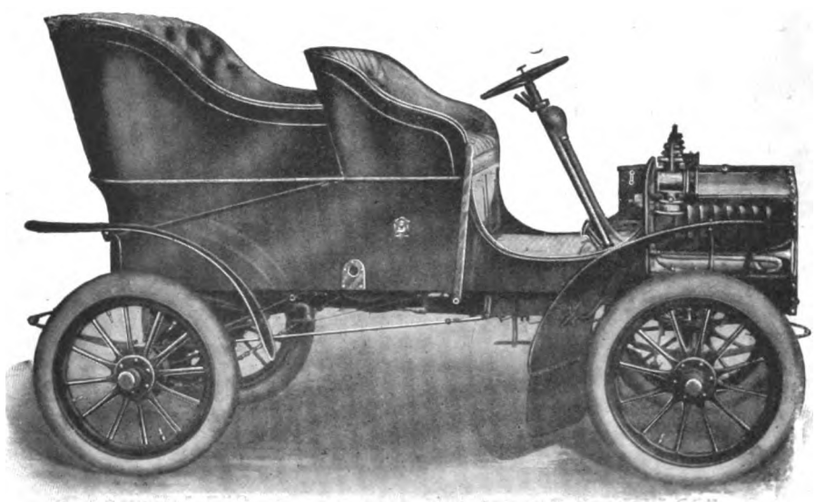
For 1905.

Appropriately Named "The Car of Power."



Model E, 1905 Michigan—Price, $1,250. Wheel Base, 86 Inches.

This superb new creation for the coming season must be seen to be appreciated. It first appeals to the purchaser by its beauty. then it satisfies him by its SPEED, STRENGTH and DURABILITY.



Model D, 1905 Michigan—Price, $1,100. Wheel Base, 80 Inches.

These magnificent cars are equipped with our tried and tested 1904 Motors, 4⅝x5 in., 14 brake test Horsepower, two cylinder, horizontal opposed, Planetary transmission, with two speeds forward and reverse; 1¼ inch chain, Warner differential, Hill Precision oiler, Kingston or Schebler carburetor, expanding rear hub brakes and brake on differential, full elliptic springs of best quality. French hood. Wheels, 30 inch. Diamond or other standard tire, 3½ inch. Construction throughout, first class.

☞ This car is unsurpassed in speed, power, appearance, easy riding, flexibility and general utility by anything at same price. We invite correspondence.

Both Models on exhibit at the New York Automobile Show, Jan. 14-21. Section C, Basement. Call and examine them in detail.

MICHIGAN AUTOMOBILE CO., Makers, Kalamazoo, Mich.

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Thread Fabric

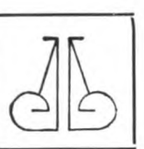
G&J TIRES

Maximum of Durability
Maximum of Speed
Maximum of Comfort
Minimum of Trouble

The thread fabric construction removes all internal friction from the fabric, so that the tires do not heat up under the longest drives at the highest speed. That is why G. & J. thread fabric tires are the most serviceable automobile tires in the world.



Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded



G&J TIRE CO.

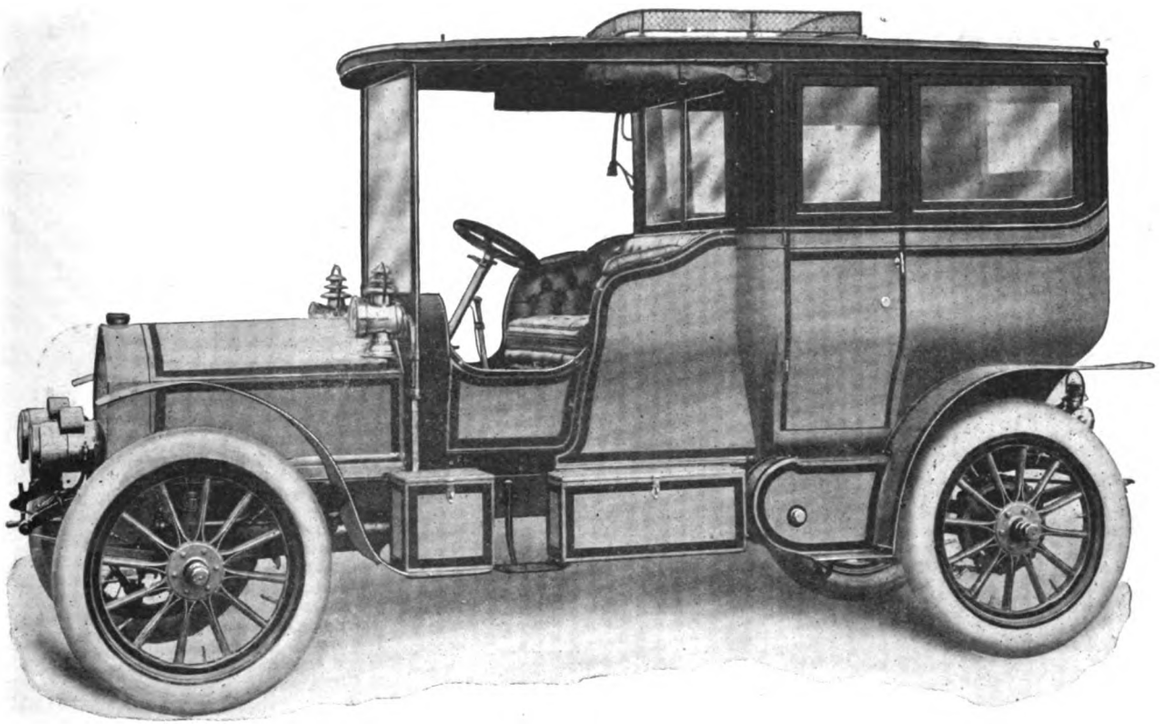
FACTORY
549-617 E. Georgia Street
Indianapolis

BRANCH
429 Wabash Avenue
Chicago

BRANCH
247 Jefferson Avenue
Detroit

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APPERSON.



50 H. P. CAR WITH LIMOUSINE BODY.

24-40-50 HORSE POWER CARS.

Limousine Bodies. Side Door Bodies.

We do not turn out thousands of cars of the hand-me-down type, but **we** make **a few good cars for those who want the best.** Our cars are carefully made by highly skilled mechanics, who have been with us for many years.

OUR CATALOGUE, which is now being distributed, **tells you how they are made.**

The Oldest Makers in America. The Best Cars in the World.

APPERSON BROS. AUTOMOBILE CO., Kokomo, Ind.

Branches: 66 W. 43d Street, New York; 43 Columbus Avenue, Boston; 394 Wabash Avenue, Chicago.

Member Association of Licensed Automobile Manufacturers.

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THE

Finger of Suspicion

WAS NEVER POINTED

AT THE

CADILLAC

THE

Best Guarantee

OF SATISFACTION IN THE FUTURE

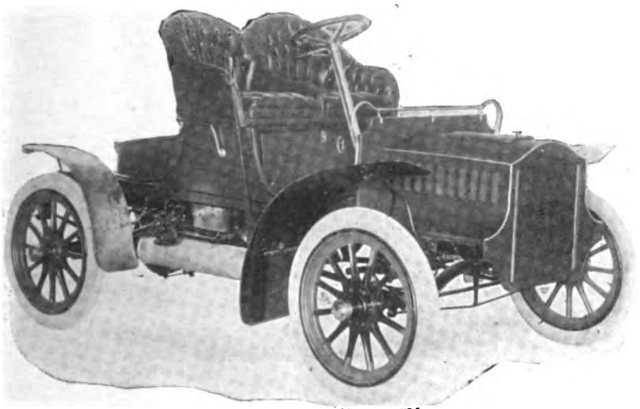
IS ITS

Performance of the Past

CADILLAC AUTOMOBILE CO.

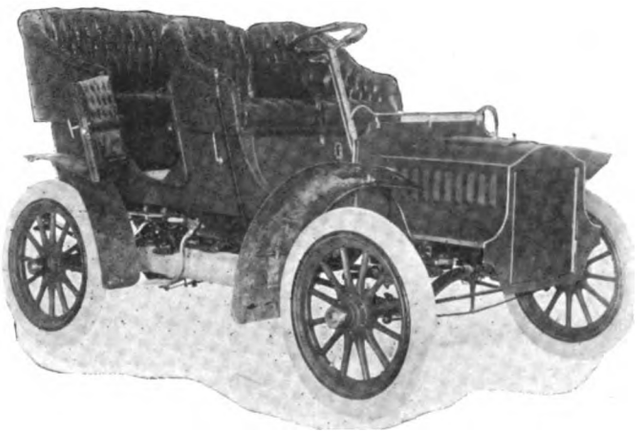
DETROIT, MICH.

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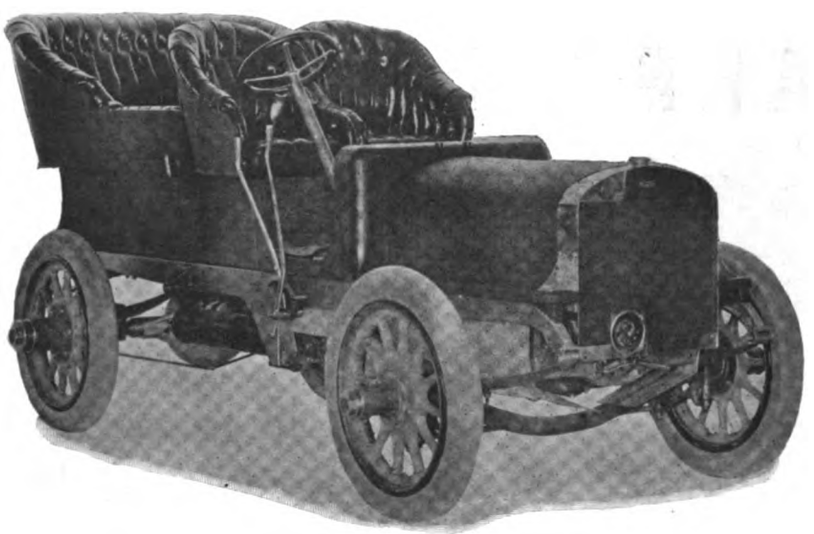
CADILLAC MODEL E, $750.

A high-powered runabout, designed for two passengers only, and can in no way be fitted with tonneau. Divided front seats. 28x3 tires. New type hood. Finish: Brewster green, primrose running gear. Option: Maroon body and running gear. Deliveries from January 15th.



CADILLAC MODEL F, $950.

Side entrance, non-convertible touring car. Divided front seats. New type hood. 3½ inch tires. 30 inch wheels. Finish: Brewster green, primrose running gear. Option: Maroon body and running gear. Deliveries from January 15th.

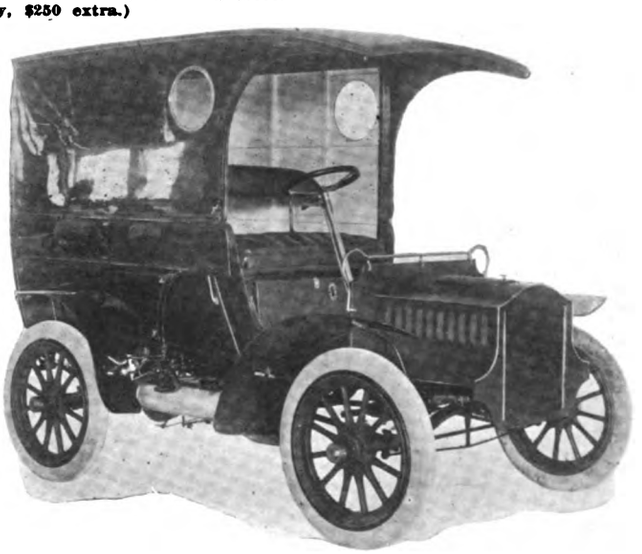


CADILLAC FOUR-CYLINDER VERTICAL MOTOR, 30 H. P., $2800.
(With aluminum body, $250 extra.)



CADILLAC MODEL E, WITH TOP, $800.

Same specifications as regular Model E. A superb two-passenger car for use in all kinds of weather.



CADILLAC DELIVERY WAGON, $950.

The Cadillac delivery wagon has been a commercial success from its very inception; used last year in many large cities, giving thoroughly satisfactory service. New model has largely increased carrying capacity. Will be a big seller. Immediate deliveries.

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MORGAN & WRIGHT TIRES
ARE GOOD TIRES

ANNOUNCEMENT.

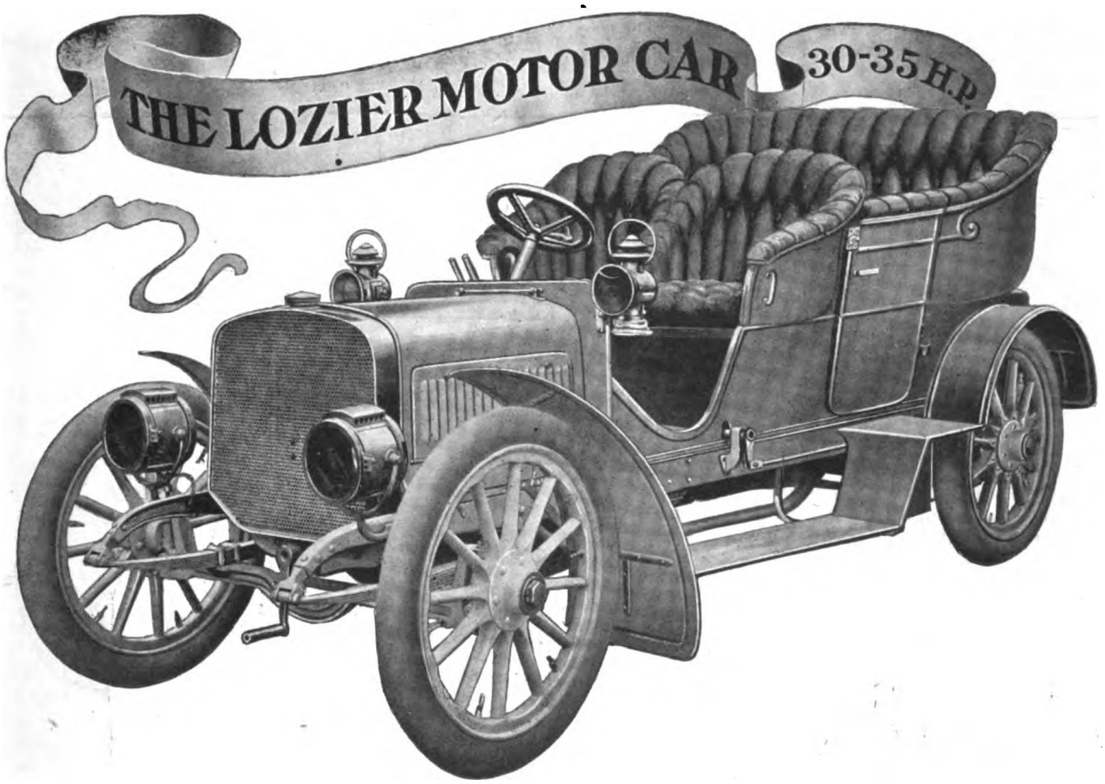
Appreciating the demand that exists for a mechanically-fastened tire in addition to the well-known Clincher type, we have secured a license for the manufacture of the

PERFECTED DUNLOP DETACHABLE TIRE,

and will exhibit samples of same, as manufactured by by us, at the New York Show, Booth W.

MORGAN & WRIGHT, CHICAGO.

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Correctly designed and ably constructed, handsomely finished and fitted throughout, "The Lozier Motor Car," with quiet and smooth running motor, perfect control and absolute dependability, puts assurance in the hands of its operator and content in its passengers' hearts. Like every other Lozier product, it is strictly high grade. The four cylinder, vertical type Lozier motor is a guarantee of excellence in itself. Ignition, high tension magneto. Tonneau, double side entrance, 5 to 7 passengers. Wheel base, 115½ inches. Wheels 36 inches. Price, $5,000 upward, according to style of body. Send for catalog.

Motor Boat Agents are requested to write us for our motor boat discounts.

The Lozier Motor Co., New York.

1 BROADWAY, Suite 9.

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"The Maxwell"



16 H. P. TOURING CAR
Price, for the Present, $1550

8 H. P. TOURABOUT
Price, for the Present, $700

MAXWELL POINTS

are bound to appeal to you on account of their extreme practical value to the average American automobilist.

The small number of parts in "Maxwell" constructions and the absolute simplicity of each part places these two cars in a class by themselves. If you want an automobile that is to be depended upon—one in which there is "nothing to do but ride" and which is a stranger to the repair shop, then get posted as to the "Maxwell." It is the car for *you*.

NO PUMP. NO CHAIN. Double opposed motor in front under the hood and easily accessible in every part. Transmission case and crank shaft cast in one piece of aluminum. Noiseless, smooth and strong.

Agencies for 1905 are now being placed.

MAXWELL-BRISCOE MOTOR COMPANY, - Tarrytown, N. Y.

"PUT DOWN 4 AND SUBTRACT 2,"

And any teacher who knows his book and is free from prejudice cannot but tell you that the rnotor that successfully performs the subtraction and accomplishes with two strokes all that others require four to accomplish is a distinct advance in the art.

The 2-Cycle Motor used in the Elmore Car

is an advance of the sort. There is no lost motion—no useless strokes.

Our booklets will help you to "study up" on the subject.
They are free for the asking.

ELMORE MANUFACTURING CO., Clyde, Ohio.

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A CLEAN SWEEP

MADE BY THE



WISE BUYERS WILL DEMAND IT.
WISE DEALERS WILL SPECIFY IT.

WISE MANUFACTURERS ARE
MAKING IT REGULAR EQUIPMENT.

HARTFORD RUBBER WORKS CO.

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IF YOU WOULD KNOW MORE ABOUT THE EXCELLENCE OF

The Perfected Dunlop Detachable Tire

examine it for yourself at any of the Automobile Shows.

THE QUALITIES THAT HAVE MADE IT

The Tire of the Season

AND

The Tire For All Seasons

are strikingly apparent. The superiority of the Dunlop has been quickly and decisively recognized by the "Men Who Know." If you are among them you are assured of a Happy New Year so far as tire experience goes.

HARTFORD RUBBER WORKS CO.,

All Dealers. **HARTFORD, CONN.**

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THE HARTFORD CLINCHER TIRE

REPRESENTS THE HIGHEST

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OF ITS TYPE



Asbestos Fabric
Prevents Rim Cutting
Hard Bead, Increased Durability
at a Weak Point

Other Manufacturers Pay Tribute to

HARTFORD { **Open Cure**
Extra Tread
Details of Quality
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by Adopting HARTFORD Methods

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Factories, No. 1 and 2, Hartford, Conn. No. 3, New Brunswick, N. J.

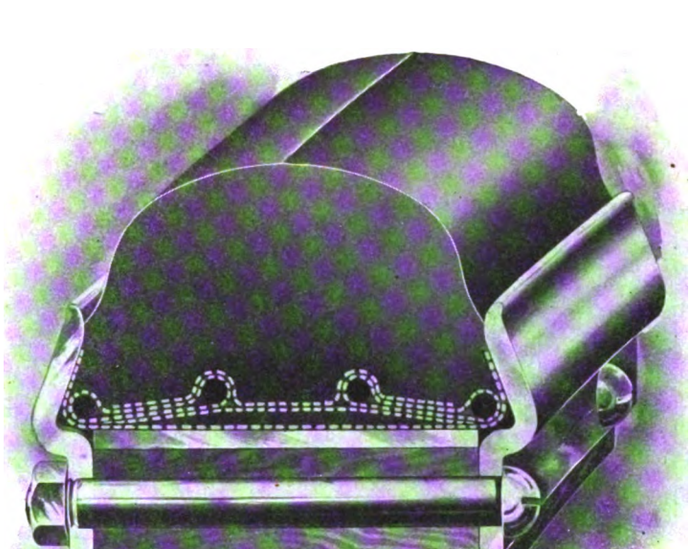
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The Test of Time and Service

on the heaviest trucks and hardest used delivery wagons by the best known and most substantial concerns in the country prove



THE TURNER ENDLESS SOLID TIRE

to be the only successful tire for commercial vehicles.

ONCE ON THE RIM, THERE'S NO COMING OFF.

Investigate its merits. It is in universal use throughout the entire country.

SEND FOR OUR LATEST CATALOGUE.

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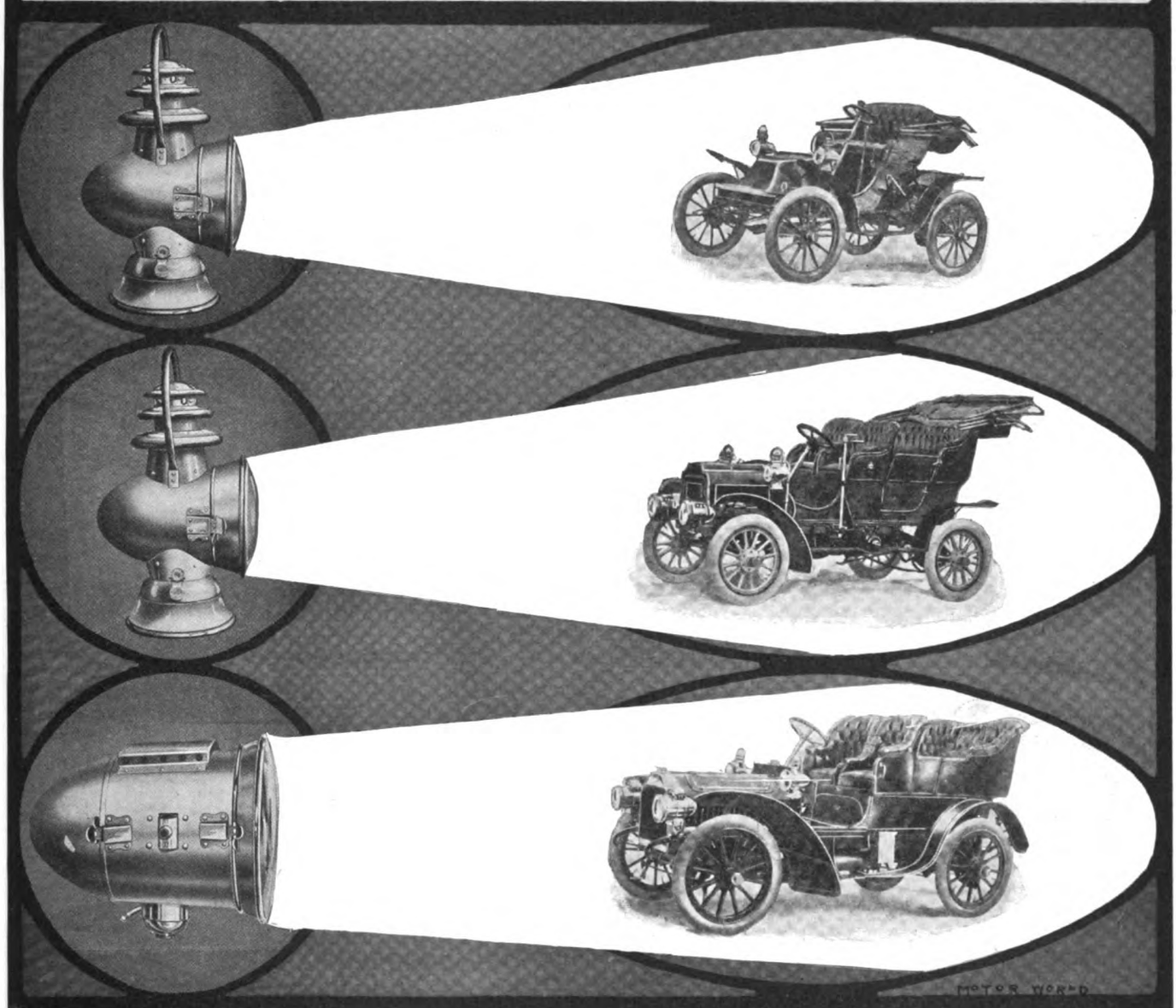
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USED BY MOST WISE MAKERS.
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HEADLIGHTS. SIDE LIGHTS. TAIL LIGHTS.



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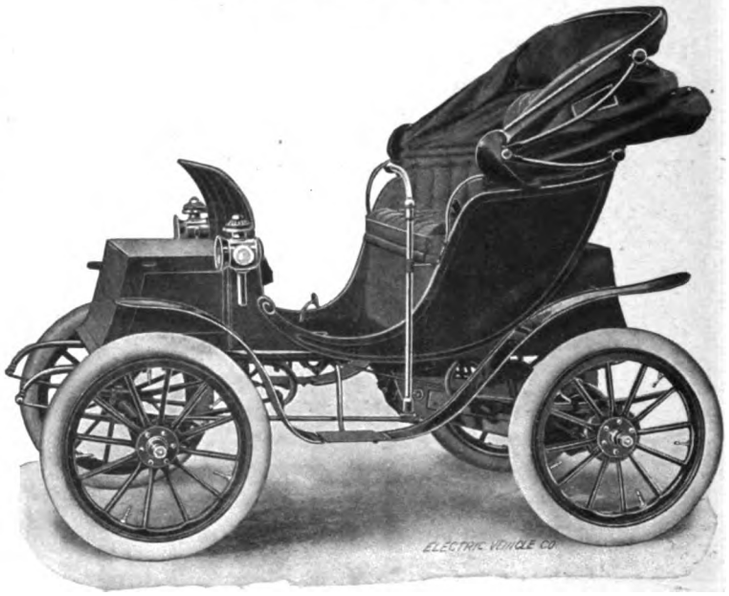
Columbia ELECTRIC

Mark XLI is an entirely new electric light, fast, of wide radius of action, luxurious in comforts, artistic in design and elegant in appointments and finish. It is the most resourceful light electric carriage yet built. Leading constructive features are steel chassis, single motor, chain drive, side lever steer, new and simple controller, with three speeds forward and two reverse, and equal division of battery weight over both axles.

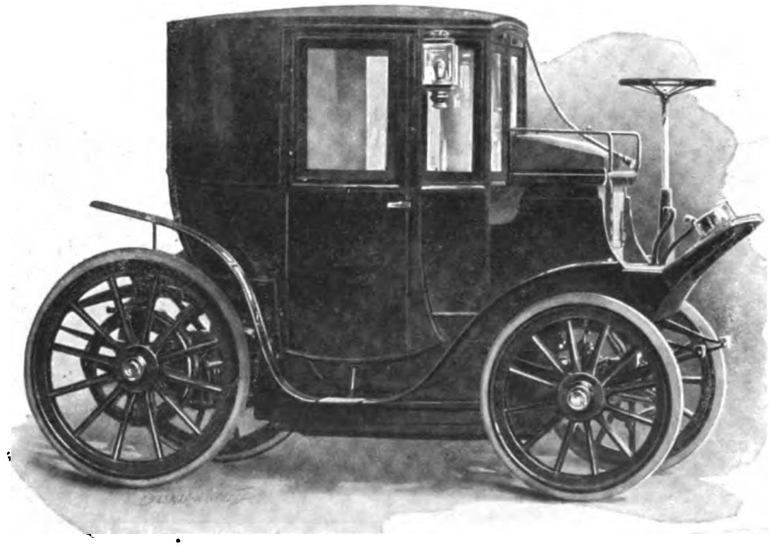
The body follows the most approved Victoria lines with swing panels, and allows for ample seat room and harmonious battery disposition. The hand-buffed leather hood is perfectly fitted and lined with the finest broadcloth.

Mark LXI realizes an ideal vehicle for town and suburban use where a 15-mile speed is sufficient, and is high in favor with physicians, ladies, and others who find electric power best for their requirements.

Supplied standard in green and royal blue, with upholstering to match.



Mark LXI. Victoria-Phaeton, $1,850.



The new electric light runabout, mark LX, is the fastest, most efficient, and widest in range of single battery charge of any electric carriage of similar weight. Exclusive of the body it is the same car as the Victoria phaeton, and a season's popularity and successful use attests its many qualities of automobile worth.

Price, $900.

Columbia Town Carriages

Columbia supremacy in the building of Electric Town Carriages for private service—Broughams, Landaus, Landaulets, Hansoms and Rear Boot Victorias—is universally conceded. Perfect in design and equipped with every possible device that can add to the comfort of the occupants, these vehicles are the vogue with New York society people and are extensively used in other large cities. They have many important electric and mechanical features, found in carriages of no other make, which are the result of our years of experience in providing for the requirements of purchasers who demand the very best of everything that pertains to vehicles or their use.

The leading position of Columbia electric commercial vehicles—light and heavy electric delivery wagons and trucks—is equally well established.

Separate Catalogue of Columbia Electric Carriages and Columbia Electric Commercial Vehicles will be sent on request.

ELECTRIC VEHICLE CO.

HARTFORD, CONN.

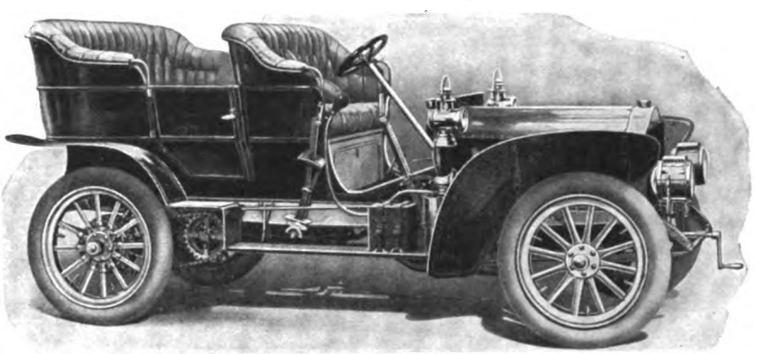
NEW YORK: 134-136-138 West 39th Street. BOSTON, 74 Stanhope Street. CHICAGO, 1413 Michigan Avenue.

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Columbia GASOLENE

The new four-cylinder 35-40 h. p. Columbia, Mark XLV, perpetuates the main features which placed its predecessor, Mark XLII, first among American cars, and incorporates such changes in details as have been suggested by a year's use. Most important among these is a new carburetter of the aspirating type, which represents the very latest and best practice and gives material increase of power. Another new and important feature is the spark and throttle control, by means of two levers so mounted on a revolving head within the steering wheel as to insure great delicacy of adjustment. The new pedals operating the clutch and foot brake are much larger than formerly, while the hand brake and speed changing levers are of new and greatly improved design. Added convenience in operation is secured by a dash-mounted mixture changing lever; compression releasing rod extending through both the cooler and the dash, so that it can be worked from either end; oiler driven by flexible shaft, replacing belts; and folding side-opening bonnet, arranged to open from either side and also bodily removable, and fenders which can be instantly taken off for close motor inspection.

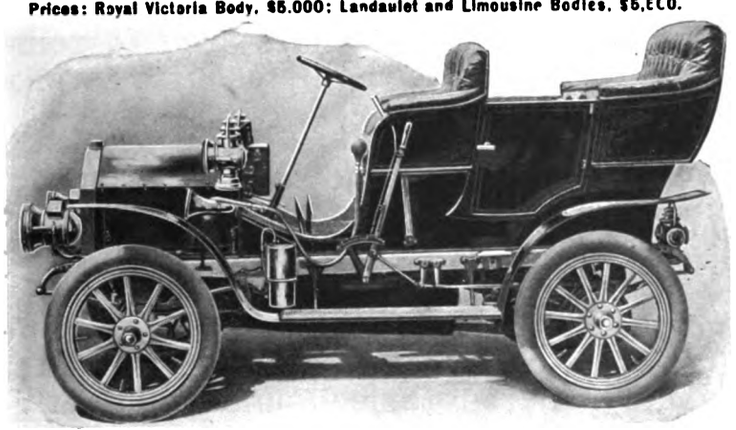


Mark XLV., 4 Cylinder, 35-40 h. p. Price, $4,000.

The standard side-entrance tonneau body with 108-inch wheel base is of an entirely new design, which we believe to be the best that can be devised for an open car with full width cross seat at the rear. The lower rearward curves harmonize perfectly with the general design, and have a tendency to deflect dust. The upholstering is of the richest and most enduring character. The body is painted dark green and the running gear yellow. Canopy or cape tops are supplied to order.

With the Mark XLV chassis, with the wheel base extended to 112 inches, we supply Royal Victoria, Landaulet and Limousine bodies. The Royal Victoria is ideally suited to park and boulevard driving, where speed is desired and a considerable distance is to be traveled. It is also a delightful touring car. The Landaulet and Limousine bodies meet every requirement for winter use and inclement weather touring. On these cars the style and color of the painting and trimming are at the purchaser's option.

Prices: Royal Victoria Body, $5,000; Landaulet and Limousine Bodies, $5,200.



SPECIAL BODIES
2 Opposed Cylinder 18 h.p.

Mark XLIV. made its first public appearance as a class winner in the Eagle Rock Climbing Contest Thanksgiving Day. It has a double horizontal opposed 18 h. p. engine under forward bonnet, sliding gear transmission, propeller shaft drive, three forward and one reverse speeds operated by a single lever, automatic cylinder lubrication, standard spark plugs, foot-operated throttle, expanding metal to metal foot-operated clutch, hand and foot brakes, and spark advance lever in the steering wheel. The wheel base is 81½ inches. The luxurious side-entrance tonneau body is beautifully upholstered in dark green morocco. The entrances are broad and easy of access, and the car comfortably seats four persons. The body is painted dark green with gold striping, and the gear in long-wearing straw color. The long running boards have rubber, brass-bound treads. Equipment includes gas headlights, oil side and tail lights, horn and tools.

$1,750

Catalogue of Columbia Gasolene Cars will be sent on request.

ELECTRIC VEHICLE CO.

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THE FISK TIRE

HAS A

WRAPPED TREAD

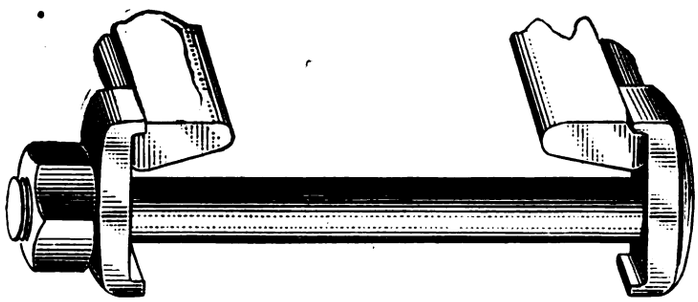
But that is not "all there is to it."

IT HAS

FISK QUALITY

AND THAT

Famous Fisk Fastening



which absolutely holds the tire on the rim until it is desired to remove it, and which then permits it to be removed without recourse to physical culture on the part of the motorist.

The Fisk Was the First Wrapped Tire.

The Fisk Was the First Mechanically Fastened Tire.

If the wrapped construction and the mechanical fastening had not been successful nothing would now be heard of either. The Fisk blazed the way that others might follow where it dared to lead and where it continues to lead.

The Fisk Rubber Company, Chicopee Falls, Mass.

Branches: NEW YORK, 754-756 Seventh Avenue. CHICAGO: 52 State Street.

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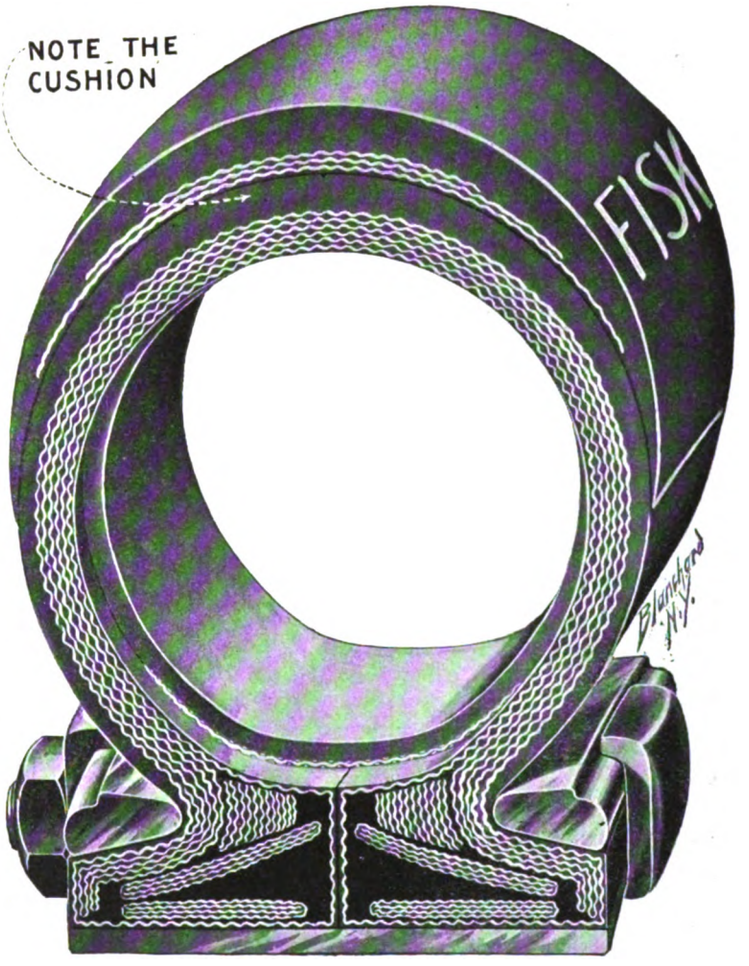
The Day the FISK

MECHANICALLY ATTACHED TIRE

was introduced was a

RED LETTER DAY

for automobilists and the automobile industry.



It Marked the Beginning

of REAL automobile tires—not merely enlarged bicycle tires, but tires especially designed and compounded and constructed for automobiles, and equipped with a fastening specially designed to stand the work of automobiles. That red letter day was some two years ago. That such a tire and such a fastening were needed and wanted, the emphatic success of the FISK is ample and indisputable evidence.

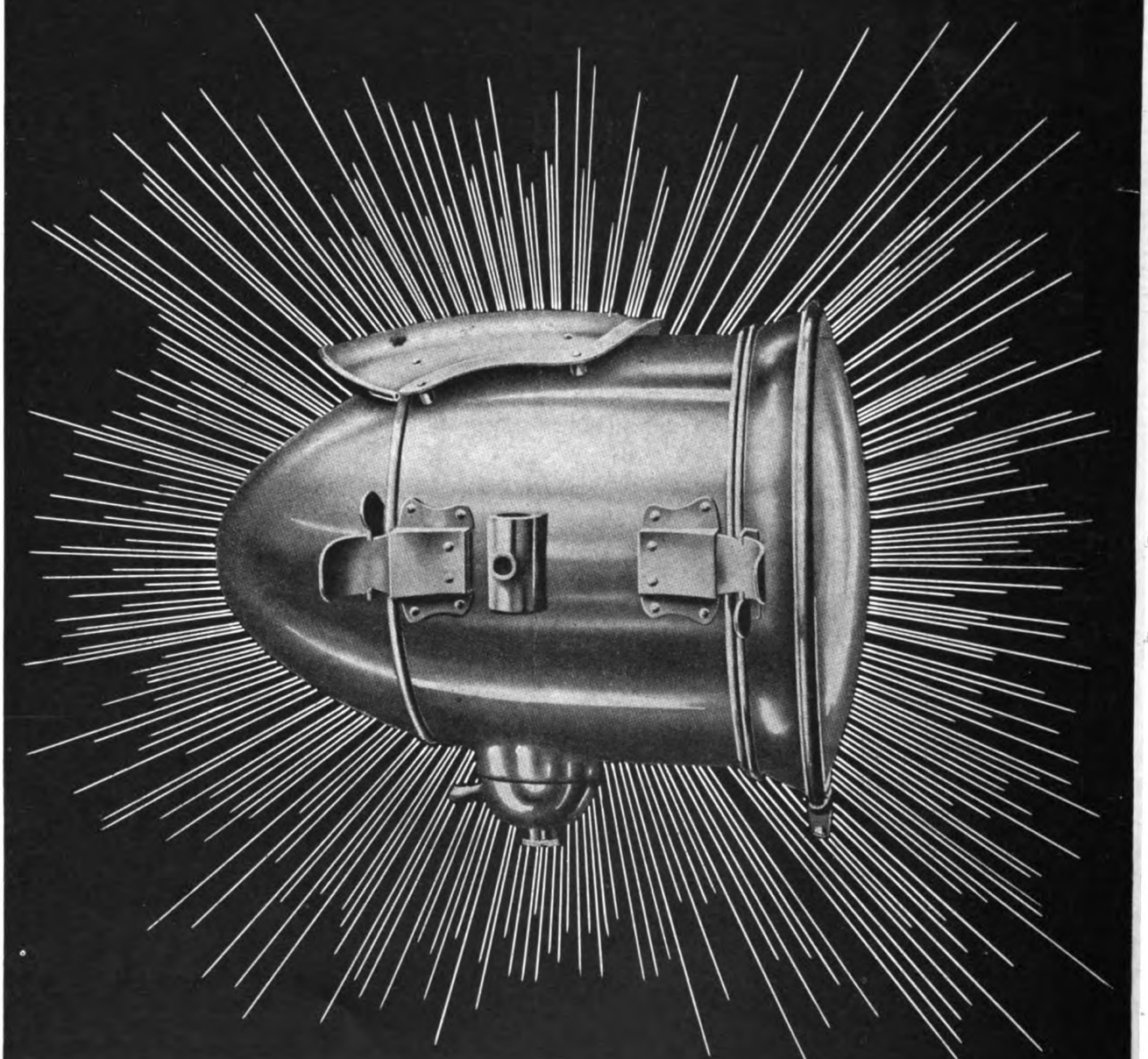
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GRAY & DAVIS



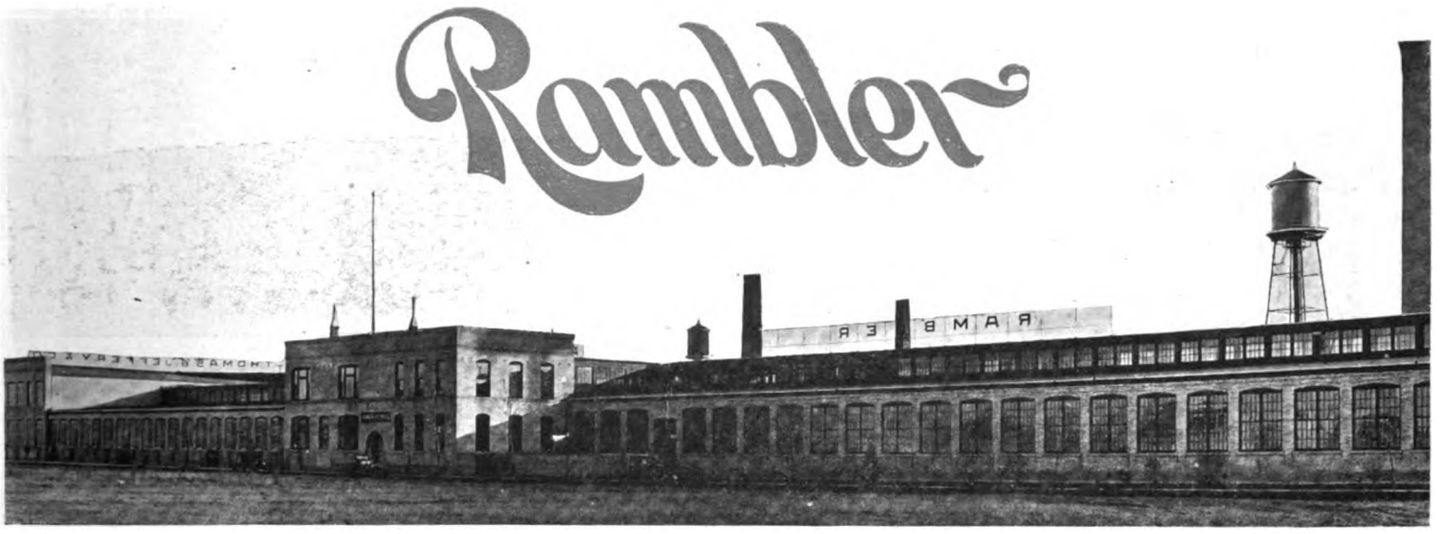
Bullet Gas Lamp Is a Success

Be sure you have Bullet Gas Lamps on your car this season.

GRAY & DAVIS, AMESBURY, MASS.

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Rambler



THE ORIGINAL FACTORY BUILDING, AND THE OFFICES.

ACHIEVEMENT, rather than explanation, will best serve as an introduction to this announcement. The thousands of RAMBLERS in daily use by satisfied owners speak far more eloquently of RAMBLER merits than is possible for words. A brief retrospect will perhaps not be out of place, inasmuch as it will best serve to accentuate the extreme practicability of the typical American motor carriage, the RAMBLER.

The RAMBLER automobile of to-day is the result of an evolution of many years, the head of Thomas B. Jeffery & Co. being he, who, with Mr. R. Philip Gormully (deceased) designed and long built the bicycle of the same name, so deservedly popular among those who were boys a generation ago.

Commencing in 1891 with experiments on a small scale, the succeeding years have seen ideas tried, abandoned and tried again, until in 1901 they had taken a sufficiently practical form to warrant the acquisition of a large factory for the purpose of producing the results in a marketable form. But even then, with the results of ten years' experimenting in mind, the type of construction formulated was found if not unfit, at least inadvisable, for use on American roads. Further experimenting followed, and in January, 1902, the RAMBLER as now known made its initial appearance. The knowledge gained in the years of experimenting was valuable in developing the new idea, and the immediate recognition by the public of the RAMBLER'S suitability for use on average roads furnishes the most conclusive evidence of its worth. Commencing with vertical cylinders, sliding gear transmitting mechanism, direct drive with bevel gear connections, all were discarded for the more direct type of horizontal engines, planetary type of transmission and chain drive, as being more simple, having far fewer parts and capable of transmitting the engine power to the wheel rim with practically no friction loss. The earmark of American ingenuity is simplicity, and that earmark is in evidence in every part of the RAMBLER. Not a part but has some use, every part a means to an end. Refinement followed experience, and to-day the RAMBLER stands without a peer for touring on these roads of ours.



THE MAIN AISLE OF ONE OF THE MACHINE SHOPS.

The enormous demand and consequent increase in facilities for production (the latter probably without precedent in any branch of the mechanical arts) have enabled us to offer the best value on the market in automobiles.

The factory, originally but seventy thousand square feet in area, exclusive of outbuildings, now covers nearly twelve acres, and, with the testing track, loading platforms and adjacent grounds, thirty-three and one-half acres.

Machinery has been added almost daily, until to-day the RAMBLER factory is admittedly not only the largest individual automobile factory of modern construction in the United States of America, but the finest equipped for its purpose.

But few parts go into the RAMBLER that are not made in our own factory, and those few consist of the woodwork (the bodies and wheels), the tires and the induction coils. Save for two of the largest steel forgings, the RAMBLER drop forge shop provides all those used in the carriage. The gray iron castings, such as cylinders, pistons, etc., are all made in the RAMBLER foundry, under expert and careful supervision.

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THE RAMBLER IN 1905.

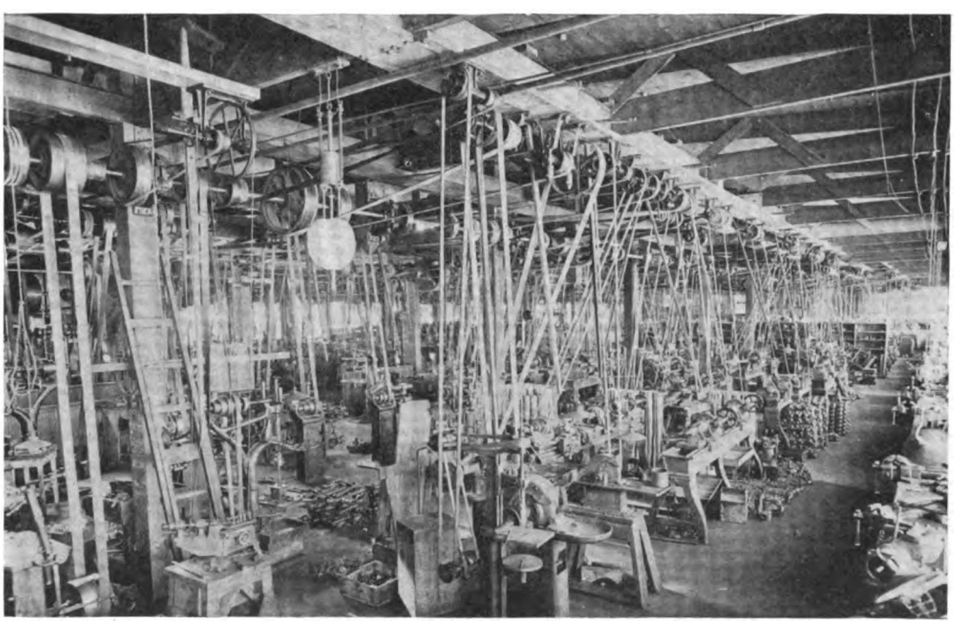


THE TESTING INCLINE AND THE LAST BUILDING ERECTED.

The pressed steel frames, unique in their design, are made in the forging plant; in fact, to further explain would be but to read through the list of component parts of the RAMBLER.

The essentials for a practical touring car are, briefly, simplicity of design, perfectness of construction, ease of control, spring suspension, road clearance and immunity from trouble, the latter being dependent upon almost all the former. In the RAMBLER the simplicity is unquestioned, there existing not a superfluous part; the thousands in continued daily use speak decisively for the thoroughness of construction; the control is by one lever and the throttle, the former convenient to the operator on the right side and the latter immediately beneath the steering wheel and operable with the left hand, so that it is never necessary to remove both hands from the steering wheel. The four full elliptic springs of the RAMBLER have but to be tried to be appreciated, their adoption on the RAMBLER marking an era in motor construction and an introduction of comfort that was soon copied by other manufacturers. Especial attention has been given to the road clearance, the RAMBLER being pre-eminently a touring car, fitted for use on any rideable roads.

Upon the transmission of the engine power to the wheels without undue loss by friction depends the success of the carriage, and while there are at least three known methods, each perhaps with some advantage of its own, we believe that the planetary system as adopted and used in the RAMBLER has so many points of superiority that it far outweighs those possessed by the other types. The RAMBLER engine is admittedly so powerful in comparison with the weight of the car that it is seldom necessary to use the slow speed; when running on the high speed the power is conveyed direct to the wheels without the mediation of gears, and with absolutely no frictional loss. Both the high, low and the reverse gears are put into operation by one lever, and without jerk; there are no gears to mesh suddenly, no teeth to strip and the mechanism adds its weight centrifugally to the fly wheel.



MOTOR DEPARTMENT.

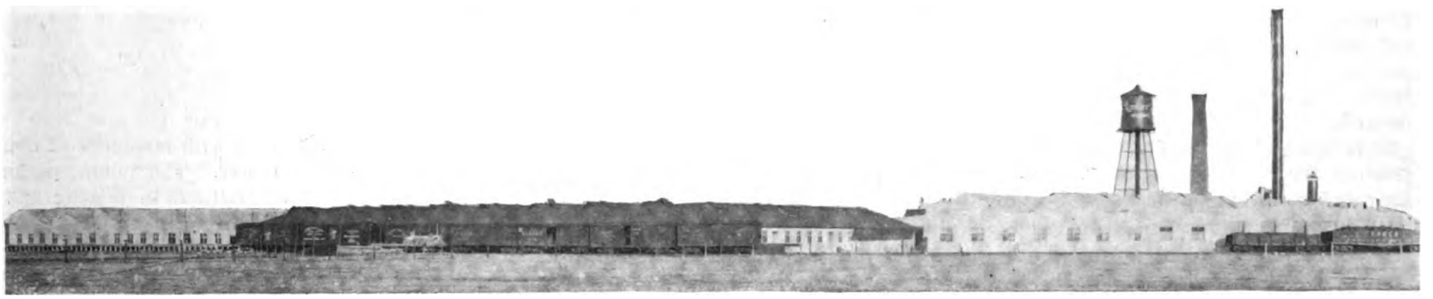
Ordinary care only in the way of lubrication is necessary for the RAMBLER type, with which it will last indefinitely. The operator has none of the delicate adjustments absolutely requisite in other types to annoy him, and there is no fixed dead weight to add to the engine load, the whole mechanism being locked solid with the fly wheel when running on the high speed, and, as previously stated, adding its weight to the centrifugal force of the fly wheel.

ENGINE.—The RAMBLER engine is now probably so well known that it is perhaps unnecessary to describe it. In brief, there are but few alterations, which alterations may be better classed as refinements. It is of the two-cylinder, horizontal, opposed type, each cylinder being 5x6 inches, with mechanically actuated valves, both sets being worked from one cam shaft. This design is preferred for the reason that long connecting rods can be used; that the pistons can be thoroughly lubricated all around and that the weight of the rapidly reciprocating parts balance each other. All bearings are of large surface and composed of what is known as "non-friction" material. The pistons each have six rings, another RAMBLER feature, and are fitted to the cylinder with a variation of not more than one-thousandth of an inch. The piston rings are ground on their faces and sides to insure a close and accurate fit. Practically all the bearings in the engine and cam shaft are self-lubricating. The number of moving parts is ridiculously small as compared with those necessary to operate other types of engines, while the vibration, reduced to a minimum by careful balancing, is communicated longitudinally to the frame and almost entirely absorbed before reaching the operator.

TRANSMISSION.—The power transmitting gearing on the RAMBLER is greatly simplified by the longitudinal location of the engine in the centre of the car, inasmuch as only a single chain is

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THE RAMBLER IN 1905.



THE ADDITION SINCE 1903—SEVEN CARS BEING LOADED AT THE PLATFORM.

necessary to transmit the power to the point at which it is to be applied. It is of the planetary type, with two speeds forward and reverse, and is somewhat different in detail to that hitherto used on RAMBLERS, and is greatly improved.

The RAMBLER engine is sufficiently powerful to drive the car almost entirely upon the high speed, at which time the engine drives direct to the rear axle without the mediation of gears. Occasionally, however, deep sand or heavy grades are encountered, when greater power is necessary, and for that purpose the secondary speed in the transmission is provided.

For reversing, the same lever is used as for the secondary speed, but in a more forward position, and is then engaged with the mechanism by applying the foot to a pedal on the foot board.

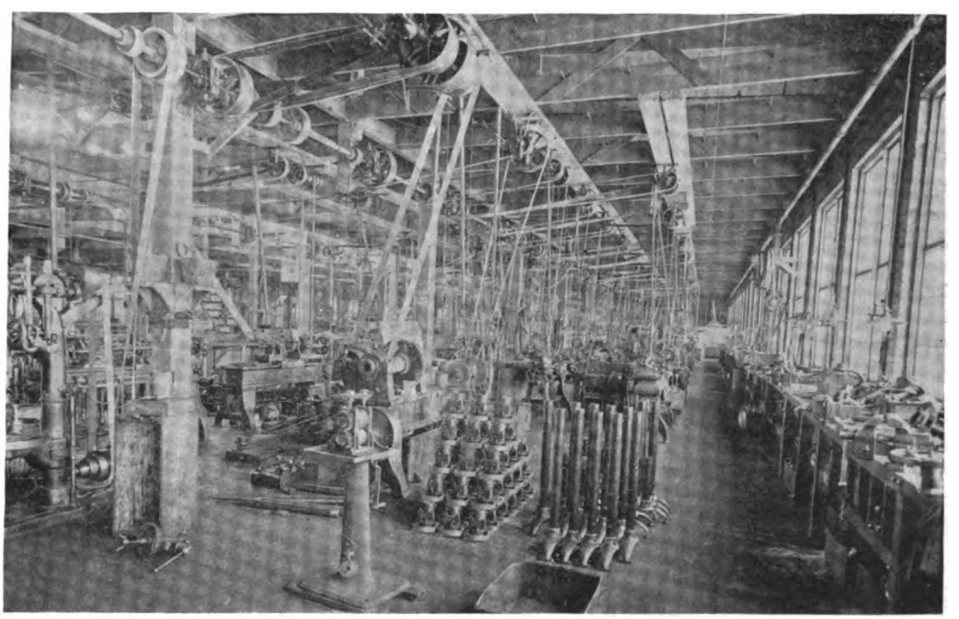
The engagements are effected through frictional leather covered clutches that avoid all noise, do not jar, and which are all adjustable and easily replaceable when worn.

These clutch bands are unused when the car is running on the high speed, and the entire gearing and transmitting mechanism rotates on the crank shaft with and becomes practically a part of the fly wheel.

The transmission is entirely disengaged from the engine when the car is at rest, and the ordinary unpleasant noise of idly revolving gears is not in evidence on 1905 RAMBLERS.

IGNITION.—Ignition is produced by means of a jump spark and the now standard type of plug. Two sets of dry batteries are provided—obtainable at most automobile garages and stores, or from any electrical supply house—only one set being in use at a time. A two-point switch is attached to the coil box, so that either set can be used, avoiding the possibility of the operator being left without electrical energy. Each set is connected to induction coils—made by the best known maker of such coils in the United States—and from the coils to the ignition plugs located in the head of the engines. The location of these plugs is so well chosen that many instances are known of operators using a RAMBLER an entire season without the necessity having arisen for examination of the plugs. Both sets of batteries and the coils are located on the dashboard, where connections and adjustments can be readily made.

The time of the explosion of the mixture is controlled by an automatic governor rotating in time relation with the crank shaft, and so constructed that the charge is ignited later when the engine is running slow than when running fast. When the engine is at rest the governor is in its most contracted position, thus giving electric contact and ignition at the extreme end of the piston stroke and rendering a reversal of the starting crank impossible. Briefly, the RAMBLER governor provides ignition at exactly the proper moment at all speeds of the engine at which to obtain the best results, and is far superior to any method of hand timing yet practised.



AXLE DEPARTMENT.

CARBURETTER.—With simplicity again as the keynote, the RAMBLER carburetter was evolved some two years ago with the idea of dispensing with one lever, previously considered absolutely necessary. The automatic feature was first used in America on RAMBLERS, and it has been so developed that we believe it the best of its type in existence. It relieves the operator of the annoyance of obtaining an exact mixture, the proportions being determined and the adjustments made at the factory in testing the carriage. An easy adjustment is provided, however, so that the proportions can be varied for the different altitudes at which the carriage may be used. In addition to the automatic feature a lever connected with additional air spaces is provided and attached immediately beneath the throttle, which can be used when running on level roads for the purpose of admitting more air and consequently reducing the consumption of gasoline.

RADIATION.—The RAMBLER engine expends no part of its power in keeping its cylinders cool. The thermo-syphon system, which has become a part of the RAMBLER, has beyond all ques-part of the RAMBLER, has beyond all ques-tion or doubt proved its efficiency. It has

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THE RAMBLER IN 1905.

been tested in every climate of the world, and with the benefit derived from past experiences it is believed that the radiator on 1905 RAMBLERS will leave nothing to be desired.

It is situated in the front of the bonnet, meeting the air unobstructedly, is of large area and radiating surface, containing, as it does, eight hundred and twenty-four thin brass tubes. The water, as heated by the engine, flows naturally from the upper part of the radiator, is cooled passing around the tubes and returns naturally, without the expenditure of power, from the lower part of the radiator, to resume its duties in the engine.

Gauges are supplied in the front of the radiator that the quantity of water may be determined, but so little is consumed by evaporation that practically no waste occurs, and very little attention to this detail suffices.

FUEL.—The fuel tank is carried under the hood of the carriage, far removed from the heated engine and the ignition circuit. The tank is of brass, considerably larger than ordinarily used, and has a capacity of about 12½ gallons of gasoline.

BRAKES.—Two brakes are provided, one on the transmission and the other acting directly on the rear wheels. The former is that generally used, and it is extremely powerful. The latter is the emergency or secondary brake, and is sufficiently powerful to lock both rear wheels. Both are put into operation by means of a pedal immediately in front of the operator on the foot board, and when necessary can be operated together.

A novel combination is provided on the 1905 Surrey type cars by which the application of the brake also releases the clutch from the fly wheel; where the traffic necessitates many and sudden stops, this is a great convenience.

STEERING.—This is of the screw and nut variety, and is of RAMBLER origin. There is little possibility of wear, all parts being thoroughly covered, protected from dirt and well lubricated. Two seasons' use have proved its strength and freedom from complication. The connections to the steering knuckles are made with RAMBLER universal joints, each one adjustable to one-thousandth of an inch.

LUBRICATION.—This is of the simplest possible character and provided direct for the cylinders by two large glass oil cups immediately over them and easily accessible for refilling. Other moving parts are taken care of in a like simple manner, and no revolving or moving part of the RAMBLER is left without the necessary lubrication. No power pump is used, owing to its fallibility in cold weather, the location of the oil cups in the RAMBLER rendering it absolutely certain that the oil will flow even in the coldest weather, the heat from the engine keeping it liquid.

CHASSIS.—This part marks to the uninitiated the greatest change in RAMBLER construction. The angle steel hitherto used for frames has proved its reliability beyond question, but the necessity of lightening the carriage without sacrificing its strength made a change desirable and the pressed steel frame appropriate. To overcome the objections to this type in having so many cross members that should be rigid and integral with the side frame, but ordinarily riveted or bolted, ingenuity was again exercised, and the long steel channel, by an enormously heavy machine built especially for the purpose, was bent to the shape desired. This is a feature possessed by no other carriage, and is of no mean merit. The depth of the channel steel, combined with the one piece construction, provides the RAMBLER with a frame that for stiffness and lightness is unexcelled. The remaining cross members, to which are suspended the engines, levers, etc., are formed of U-shaped steel, with the ends bent and doubled to form the greatest riveting surface to the side frames. Factory tests have revealed the fact that this type of frame will sustain far more than twice the dead weight of the angle steel, and yet with a considerable saving in weight.

The whole of the mechanism is protected on the underside by a waterproof cover fastened to the chassis frame by spring clamps, but which can be readily removed when necessity requires it.

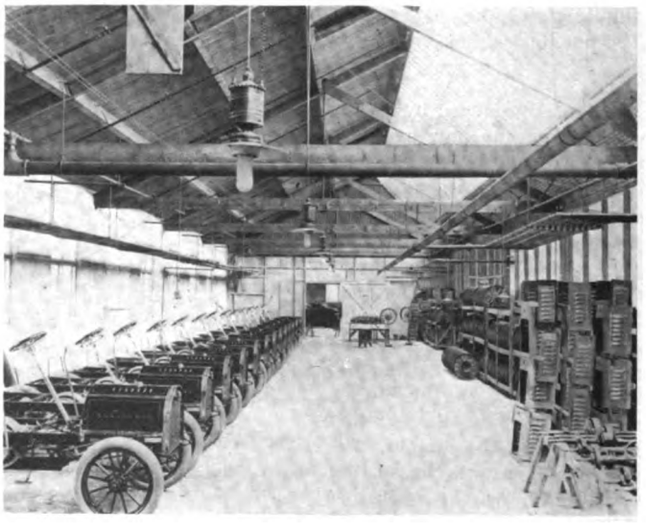
HORSEPOWER.—Believing it advisable to under rather than overestimate the horsepower, the RAMBLER has until this year been classed as sixteen horsepower. The refinements in the engine warrant the increase of from sixteen to eighteen in 1905, and upon the Type Two from eighteen to twenty, and it is confidently believed that with this increase they will still be able to tour with machines of double their nominal power. The public performances of the RAMBLER in touring and in some cases, racing, have revealed to an astonishing degree the elasticity of the term "horsepower," and while all RAMBLERS are rated modestly, their operators need never fear competition with other cars of considerably higher rating. Its various public performances are probably sufficient evidence on this point without further explanation.

SPRINGS.—The RAMBLER habit of using four full elliptic springs has added so much comfort to the carriage that the style will be continued, and, with the lengthened wheel base, the 1905 RAMBLERS should as far excel their competitors in comfort as they have in the past.

AXLES.—Included under this heading is the differential mechanism, which is located on the rotating inclosed rear axle. This is of the spur gear type and entirely inclosed, being practically oil and dustproof.

The two portions of this axle are held together with large steel drop forgings on heavy tubes, whose outer ends carry roller bearings of large diameter and whose inner ends are fitted with ball bearings, insuring a free movement of the axle, and of such construction that it will require but little care and attention.

The front axle is of an extremely strong design of tubular construction, with walls one-quarter of an inch in thickness, to the ends of which are attached heavy forged yokes for the steering knuckles. The latter are also heavy drop forgings.



PAINT SHOP—PART OF A DAY'S OUTPUT.

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THE RAMBLER IN 1905.

CHAINS.—These are of an especially heavy and durable pattern, made by the foremost manufacturer of chains in the country, and are practically immune from trouble.

WHEELS.—The wheels are of the wood artillery type, 28 inches in diameter for the Models "G" and "H" and the Delivery Wagon, 30 inches for the Surrey Type One, 32 inches for the Surrey Type Two and 34 inches for the Limousine. These need no extended description, inasmuch as they are now practically standard, the difference in value being governed only by the quality of the material.

The rear wheels (excepting on the Surrey Type Two and the Limousine) are fastened on the axle by means of keys and accurately tapered fittings and, when squarely seated, are then made fast by a lock nut at the outer end.

In the Surrey Type Two and the Limousine, however, the rear wheels revolve on ball bearings, the rear axle in that model being rigidly attached to the springs, the wheels being independently driven by a chain wheel on each hub, with power from a chain wheel on a counter shaft, containing the differential mechanism, located in the centre of the truss rod about midway between the engine and rear axle.

The front wheels of all models revolve on ball bearings of large diameter, are adjustable by cone movement and fastened with lock nuts.

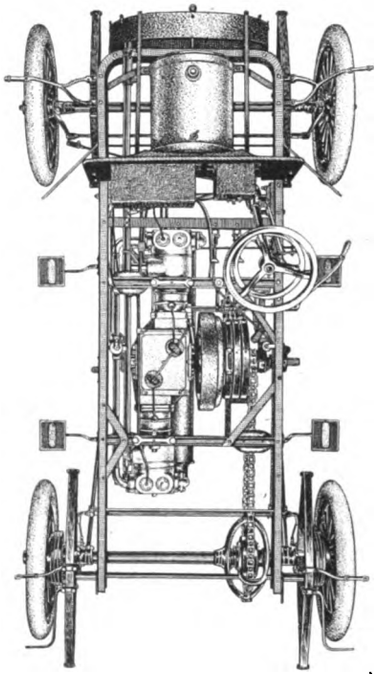
TIRES.—On Models G and H and the Delivery Type One these are twenty-eight inches by three inches, on Surrey Type One they are thirty inches by three and one-half inches, on Surrey Type Two thirty-two inches by four inches and on the Limousine they are thirty-four inches by four and one-half inches, and an option is offered in Goodrich, G & J., Diamond, Hartford and Dunlop.

BODY.—The now well known RAMBLER French front will be continued for Models G and H, the latter being the former model with the addition of a tonneau. In Surrey Type One the wheel base is ninety inches, and the body known as the Surrey Type, with side entrances. These are one-piece bodies, and the rear part cannot be removed as in the old style tonneau bodies. In Surrey Type Two the body is of the same variety, but larger, longer and more luxuriously finished, while the wheel base of the carriage is increased to one hundred inches. The Limousine is naturally a closed body, with room for at least five persons, and has been designed with the idea of its use as a theatre or station 'bus.

GENERALLY.—It will be seen that the designer of the RAMBLER has succeeded in making every part perform its duties thoroughly, and has simplified them by multiplying their duties. There are no power consuming devices, such as the water circulating pump or air circulating fan, no power-driven lubricators, no air compressor or magneto. While it may be



true these devices do not consume a great amount of power, it is indisputable that they do not run of their own volition, and that they add unnecessary mechanism. No essential of any description is omitted from the



CHASSIS, SURREY, TYPE ONE.

RAMBLER, but every component part has its work to do, and accomplishes it.

The materials used in every part of the RAMBLER car are of the best that can be obtained. Experience has shown what is best suited for each purpose, and in the RAMBLER there are no misfits, every part being made of that material best suited for the work it has to do.

Their size, power and beauty put them in a class by themselves, it being beyond the power of any other manufacturer to offer such value as the RAMBLER for its price. It is only possible with the RAMBLER because of the immense and exceptionally equipped factory. The RAMBLER factory has no board of directors, no multiplicity of high priced officials, wastes no money in racing or useless advertising, the whole aim and effort being to give to the people exceptional and unapproachable value for their money.

WARRANTY. — We WARRANT all goods furnished by us for sixty days following the date of their shipment, based upon the date of invoice covering the goods, this warranty being limited to the replacement in our factory of all parts giving out under normal service in consequence of defect of material or of workmanship.

If the circumstances do not permit that the work shall be executed in our factory, this warranty is limited to the shipment, without charge, of the parts intended to replace those acknowledged to be defective.

It is, however, understood that we make no warranty whatever regarding pneumatic tires, coils or the batteries, complaints regarding which must be taken up with their respective makers.

We cannot accept any responsibility in connection with any of our motor cars when they have been altered or repaired outside of our factory.

We are not responsible to the purchaser of our goods for any undertakings, promises or warranties made by our representatives beyond those expressed above.

TERMS.—All carriages are free on board cars at Kenosha, Wisconsin. When delivered to the railroad company they are ready for immediate use. Twenty-five per cent of the purchase price in current funds is required with an order and the balance at the time of shipment.

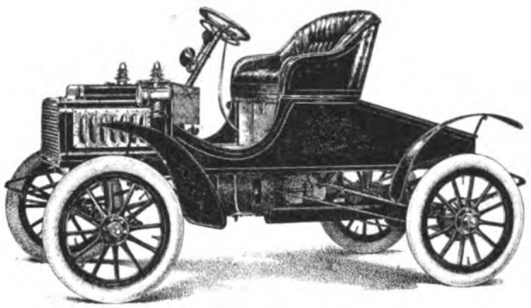
Carriages will be crated for an additional charge if desired, but under the prevailing tariff there are but very few points where this would effect any saving in the freight charges, and to all Eastern points the charge would be higher for a machine crated than if set up.

Our responsibility ceases when we deliver carriages to a railroad company and have its receipts for them in good order.

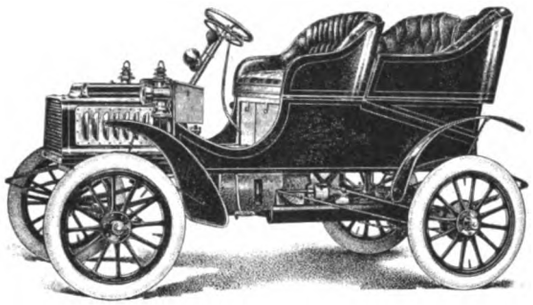
BRANCHES AND AGENCIES. — The branches are at No. 145 Columbus avenue, Boston; Nos. 302-304 Wabash avenue, Chicago, and No. 242 North Broad street, Philadelphia. The New York agency is at No. 134 West Thirty-eighth street, while representatives are to be found in substantially every other city in the United States.

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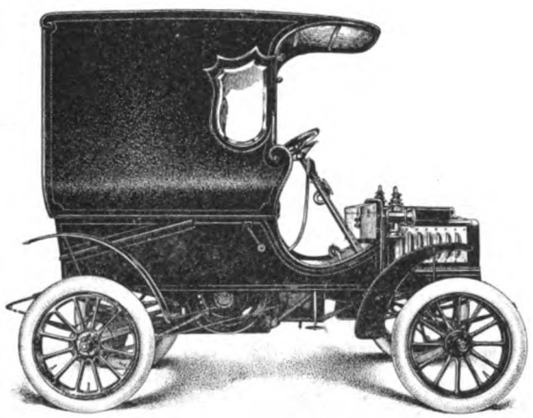
THE RAMBLER IN 1905.



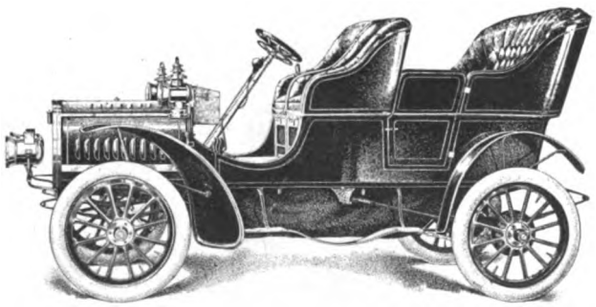
MODEL G, $750.



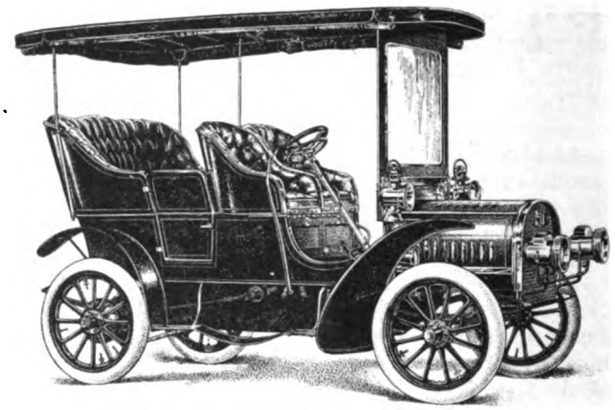
MODEL H, $850.



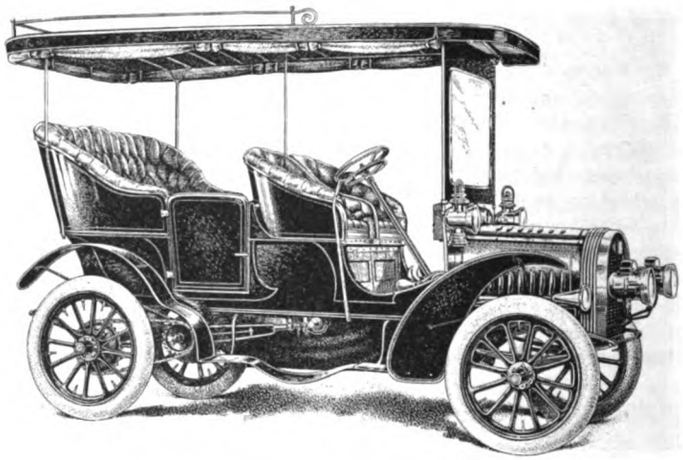
DELIVERY WAGON, $850.
Convertible into runabout without expense and into tonneau for $100 extra.



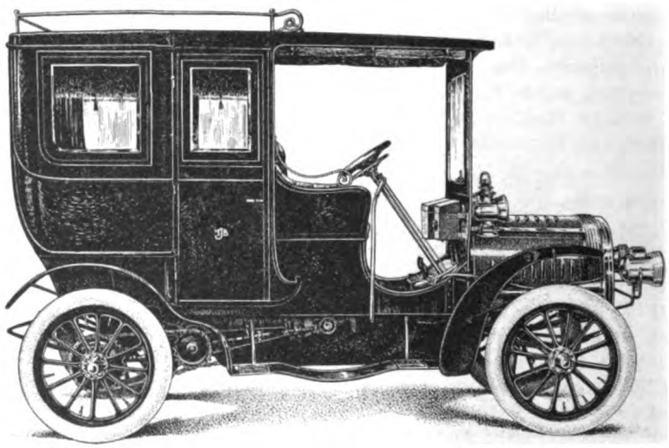
SURREY, TYPE ONE, $1350.



SURREY, TYPE ONE, WITH TOP, $1500.



SURREY, TYPE TWO, $2000.



LIMOUSINE, $3000.

THOMAS B. JEFFERY & COMPANY.

Main Office and Factory, Kenosha, Wisconsin.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, January 19, 1905. No. 17

GETS THE GARDEN

License Association Secures the Lease and Controls Show Situation in New York—Dates in January are Selected.

January 13-20 will be the dates of the 1906 automobile show in Madison Square Garden, New York. It will be confined to members of the Association of Licensed Automobile Manufacturers, and of makers of steam and electric vehicles, and doubtless of parts and accessories.

This is in the nature of confirming what the Motor World exclusively stated last week, i. e., that the A. L. A. M. had quietly negotiated for and had obtained an option on a lease of the Garden for a term of years. This lease, it is understood, was signed on Tuesday. It certainly was ratified at the general meeting of the Association of Licensed Automobile Manufacturers on that day. It covers a period of two years, with privilege of renewal for two years more. The lease is of an exclusive nature. It forbids any other display of automobiles of any kind by any one during the life of the contract. It is known that dates specified fall next year on the dates as here given.

While it is yet too early to talk of plans, it is certain that the license association aims to make the show a source, if not of profit, then of no expense to its members. The receipts will be equitably distributed.

It develops that the decision to secure an option on the lease of the Garden was definitely reached at a quiet meeting of the A. L. A. M. executive committee held in Buffalo last month. It was known that the meeting occurred, but that anything of such momentous importance had been discussed was not even suspected, although but a short time previous an officer of the organization, in discussing show matters, let fall a remark that, in the light of to-day, is seen to have been fraught with significance.

What move the N. A. A. M. or the independent trade will make in the direction of holding a show is problematical. It is said that in view of the termination of the "triple alliance" some members of the N. A. A. M came to New York with a new show plan well outlined—in fact, President White in his annual address plainly said so—but apparently the result of the annual election on Wednesday, at which it was shown that members of the A. L. A. M. were in such strength as to hold the whip hand, was sufficient to subdue any inclination that may have existed to consider such plans.

Pope to Return to Hartford.

The Pope Mfg. Co.'s headquarters are going back to Hartford. For several months the step has been under consideration, but the definite decision was reached only this week. The offices will, of course, be attached to the Hartford factory, and it is believed that again being in immediate touch with the manufacturing end of the business will facilitate matters in many respects. Hartford, as is well known, was the birthplace of the original Pope Mfg. Co., the New York offices being taken over at the time the new corporation of the same name purchased the effects of the late American Bicycle Co.

Fisk Promotes Two Managers.

At a meeting of the Fisk Rubber Co. on Thursday last, at Chicopee Falls, Mass., the following directors were elected: A. N. Mayo, H. T. Dunn, H. G. Fisk, Edward Pynchon, W. T. Baird, P. T. Jackson, Jr., and E. H. Broadwell.

At this meeting E. H. Broadwell, manager of the Detroit branch, was elected first vice-president, and Frank C. Riggs, manager of the Chicago depot, second vice-president. The other officers remain as heretofore, viz.: H. T. Dunn, president; H. G. Fisk, clerk, and A. N. Mayo, treasurer.

Miller to Invade Cleveland.

Charles E. Miller, the well known New York supply man, is about to invade Cleveland. He has made all necessary arrangements to establish a depot there. It will be the fourth in the Miller chain.

M. & W. Gets a Dunlop License.

Morgan & Wright have added a mechanically fastened tire to their line. It is of the perfected Dunlop type, being made under cover of that patent.

MET TO ADJOURN

Independent Makers Confer, but Fail to Take Definite Action—Reo Threatens to Sue A. L. A. M. for $500,000.

That the Motor World's great scoop of last week, reporting the pendency of the since consumated deal of the Association of Licensed Automobile Manufacturers for the lease of Madison Square Garden for show purposes, provided a sensation of the first magnitude is beyond doubt.

It was the first intimation that those outside of the ranks of the license association had that anything of the sort had even been dreamed possible. Several of them acknowledged being fairly stunned by the news. So sensational was the report that few of those who were in evidence at the show on Saturday were able to bring themselves to believe it. As the day wore on, however, the truth of it was confirmed; and on Monday evening it brought results in the form of a quiet meeting of some fifteen independent manufacturers at the Fifth Avenue Hotel. They had no particularly definite plan in view, but seemed of a mind that the conference might evolve something of mutual interest. The discussion developed that a general dissemination of the independent propaganda would be of value, and the talk was along that line. As most of those in attendance at the meeting did not, however, feel authorized to commit their companies to any policy, or to the expenditure of funds without consulting their directors, the meeting really availed nothing. T. B. Jeffery & Co., it is said, were not represented.

Probably the most interesting feature of the meeting was the appearance of R. M. Owens, sales manager of the Reo Motor Car Co., with his lawyer, who announced that he would this week institute proceedings against the Licensed Association of Automobile Manufacturers, or the responsible parties in the association, for $500,000 alleged damages. Owen has figured that the the Reo business has been damaged to that extent; but there are those—even among his friends—who con-

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sider that he is taking the wrong tack. As one of them expressed it: "The Reo Motor Car Co. has little more than started, and, perforce, can have little or no business to have sustained damage." The man who held this opinion thought that a suit of this sort could have but one outcome, and that that would not be favorable to the independents' cause. If almost any one else took action of the sort, he said, it would have far more weight.

The Week's Incorporations.

Bath, N. Y.—The Kirkham Motor Co., under New York laws; capital, $25,000. Directors—C. B. Kirkham, C. A. Elias, W. L. Dolson, Bath.

Middleton, Conn.—Hubbard Motor Car Co., under Connecticut laws, with $100,000 capital, to manufacture engines for marine and stationary use.

Troy, N. Y.—Hudson River Motor Vehicle Co., under New York laws, with $3,000 capital. Incorporators—Sarah Teschau, William Cothell, Jessie Cothell.

New York, N. Y.—United Motor Car and Supply Co., under New York laws; capital, $25,000. Directors—E. D. York, Flushing; H. S. Byrne, F. N. Whitney, New York.

New York, N. Y.—Acme Motor Car Co., under New York laws, with $12,000 capital, to make automobiles. Incorporators—J. D. Maguire, R. L. Julian and G. H. Strout.

New York, N. Y.—Gotham Automobile Co., under New York laws, with $10,000 capital, to sell automobiles. Incorporators—H. A. Trimm, A. C. Thompson, S. W. Mathewson.

New York, N. Y.—International Observation Motor Car Co., under New York laws, with $200,000 capital. Directors—S. M. Fisher, E. G. Laureau and Charles S. Sinsheimer.

Middletown, Conn.—Simplicity Auto Co., under Connecticut laws, to manufacture motor vehicles. Incorporators—W. H. Kitto, A. S. Pollard, W. H. Chapman and Perry & T. W. Hale.

Will Cease Sunday Work.

The Cushman Motor Company, of Lincoln, Neb., has at last decided to do away with Sunday labor, and hereafter its employes will only be compelled to work six days a week. This change was decided upon at the annual business meeting of the company last week. The officials and directorate elected at the time are as follows: President, L. H. Cushman; vice-president, Everett B. Cushman; treasurer, S. H. Burnham; directors, L. S. Cushman, E. B. Cushman, L. W. Cushman, H. E. Cushman, J. W. Cushman, S. H. Burnham, George W. Bonnell and F. A. Mapes. W. E. Jackway succeeds A O. Taylor as manager.

Andrews is a Miss.

Few who see the name of A. M. Andrews, which appears on the letter heads of the new Reo Automobile Co., of Chicago, are aware that the Andrews concerned is a Miss Andrews. She figures as vice-president and secretary of the company, and is taking an active part in its management.

BENNETT THREW A BOMB

But They Wouldn't Let it Burst at the N. A. A. M. Meeting—Selden Men in Control.

What was expected to prove an animated gathering of the National Association of Automobile Manufacturers was held at the Victoria Hotel, New York, on Wednesday morning, the 18th. It was the occasion of the annual meeting, and the previous knowledge that two tickets were in the field, one practically representing the Association of Licensed Automobile Manufacturers, the other the independent manufacturers, led to the assumption that there would be "something doing" in the way of excitement.

As a matter of fact, the election itself was very one-sided, and what little there was done was dispatched in less than an hour. The only trace of excitement was apparent when George W. Bennett, of T. B. Jeffery & Co., boldly sought to introduce this caustic resolution bearing on the show situation:

"Resolved, That in view of the fact that a majority of the show committee of the national association have shown themselves to be unmindful of the best interests of this association, and unfaithful to the trust imposed in them, that they be and are hereby discharged."

In leading up to this resolution Mr. Bennett asked if the members of the N. A. A. M. show committee, two of whom are members of the A. L. A. M., had been cognizant of the purpose of the license association to secure a lease of Madison Square Garden for show purposes. President Windsor T. White, a manufacturer of steam vehicles, and hence in a position to view both charmers with equanimity, is a member of the N. A. A. M. show committee. He replied that he himself knew nothing of the movement leading up to the lease, and then promptly ruled Mr. Bennett's resolution out of order.

After this slight flurry the election of directors was proceeded to. The result, as stated, was one sided, the adherents of the Selden patent being elected by an overwhelming majority as follows: R. D. Chapin, Olds Motor Works, 28; S. T. Davis, jr., Locomobile Co., 27; Charles Clifton, George N. Pierce Co., 27; S. D. Waldron, Packard Motor Car Co., 27; L. H. Kittridge, Peerless Motor Car Co., 26.

The "independent" candidates polled the following votes: J. S. Bretz, Corbin Motor Vehicle Co., 12; Charles E. Duryea, Duryea Power Co., 10; J. E. Couzens, Ford Motor Co., 11; Thomas Hay, National Motor Vehicle Co., 11; E. R. Shurmer, Royal Motor Car Co., 11.

It was also announced that the executive committee had appropriated the sum of $500 to the good roads committee, of which R. D. Chapin is chairman. This money is to be used in furthering the Brownlow bill.

G. W. Bennett offered a resolution extending a vote of thanks to Percy Owen for the excellent entertainment afforded the association and its guests at the smoker given at the Waldorf-Astoria on Tuesday night.

The treasurer reported a balance on hand of $10,500.

The directors will meet on Saturday to choose officers for the 1905 term. In this connection it may be interesting to note that the directors of the National Association of Automobile Manufacturers now comprise twelve members of the Licensed Association of Automobile Manufacturers, two independents, one electric, and Windsor T. White, representing the steam interests.

President White's report was an interesting document. It, of course, reviewed the work of the year. During that time were held eleven meetings of the executive committee and one general meeting. The average attendance was fourteen. Nine active members were admitted, five left the ranks and eight associate members resigned, the latter to cast their lot with the Motor and Accessory Manufacturers, which, Mr. White stated, had been "formed with the approval and encouragement of your executive committee."

No new associate members have been admitted to the N. A. A. M. since August last, because it was believed to be to the best interests of the association that the parts and accessory people should flock by themselves.

During the year the membership committee continued the policy previously approved—that is, of declining to admit new applicants until they had been in business at least one year and were known to be reliable.

As the result of the formation of the Motor and Accessory Manufacturers, a joint conference committee had been appointed, resulting in some substantial advantages in the form of deferentials.

Mr. White remarked the failure to obtain a modification of freight rates, and reported that there was threatening an increase of Western classification, efforts to avoid which were being made.

He explained the action of the N. A. A. M. in deciding to test the legality of the license laws in the following language:

"The legality of requiring the automobile to be licensed by every State, county or township has been thoroughly considered. Your committee first discussed a plan to test the legality of such laws as require an automobilist who has secured a license in one State to take out another when he enters another State; in other words, your committee believes that one license which would cover all States would not be particularly oppressive. We were advised by counsel, however, that any law, if valid in one State, would be valid in another, and that there is no way of forcing one State to accept a license issued in another. Our counsel has prepared an opinion to the effect that it is not legal to require an automobilist to take out any license at all, and a committee has been appointed to prepare a test case, or, if necessary, as many as three test cases, in an endeavor to secure such a decision as will be binding upon the legislatures of all States.

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Your executive committee, in deference to public opinion, has acted in this matter with great caution, but now that every State, county and township has taken it upon itself to demand a license, and in some cases to go so far as to prohibit the use of automobiles entirely, we feel that the interests of manufacturers demand aggressive action.

"Opponents of the automobile insist that licenses are necessary because of the accidents which occur upon the public highways. It is true that accidents are too common, but we maintain that they are due in no small measure to the condition of our roads, and that the proportion is steadily decreasing. The daily press, unfortunately, devotes three or four lines to an accident to a horse-drawn vehicle which results in the death of two or three persons, and gives a column to an automobile upset resulting in trifling bruises. One of our leading papers recently devoted eight inches of space to a record of the railroad accidents in 1903, yet this record, as officially reported by the Interstate Commerce Commission, showed that 11,006 people were likely and 80,673 were injured in one year. Here is a record of thirty deaths and 246 injuries every day in the year."

The result of the association's work in connection with the St. Louis Exposition, Mr. White reported, was one of its "greatest accomplishments."

That Mr. White himself had no previous knowledge of the intention of the Association of Licensed Automobile Manufacturers to secure a lease of Madison Square Garden was made evident by a reference to the show subject in his report.

"Your committee has under consideration," he said, "plans for the future which, it is hoped, will relieve the pressure and give to the members of this association a good deal more space than they have at present."

Body Builders Meet Tire Man's Offer.

With the idea, apparently of carrying the war into the enemies' camp, the Associated Body Builders of the Automobile Trade in France have met M. Michelin's offer of a cup to be given for the lightest touring body by offering a cup of their own. This cup will be given to the company for designing pneumatic tires which proved to be the best capable of sustaining the weight of a thoroughly reliable and satisfactory touring car.

The Michelin cup will be competed for every year, and will be decided by a committee appointed from committees of the A. C. F., the T. C. F., the Association Generale Automobile, the Chambre Syndicate de l'Automobile, and the Chambre Syndicate de Cycle et de l'Automobile. The regulations adopted and the style of vehicle selected will vary each year and will be announced by the first of March in each year. For the first competition, which will be held next spring, a 24 H. P. Chassis, with a body capable of providing commodious accommodation for six passengers, has been selected. The weight of the chassis and fittings will be deducted from the total weight of the car, thus giving the weight of the body.

M. & A. M. IN SHOW MATTERS

Retiring President Drops Hints and Makes Some Recommendations—New Officers Chosen.

To add to the much compounded interest that attends the existing show situation, it is not impossible that an exhibit wholly of parts and accessories may come to pass. The intimation was let fall by President D. J. Post, of the Motor and Accessory Manufacturers, at their annual meeting in the Hotel Astor on Friday evening last, 13th inst. It was contained in his annual report. After suggesting the desirability of permanent headquarters in New York, in charge of a salaried assistant secretary, Mr. Post said:

"I personally favor, first, a show alliance with manufacturers of complete vehicles, but, failing in that, I believe creditable, profitable and exclusive parts and accessories shows can be held by this organization."

He said that he conceded to manufacturers of automobiles a premier position, and the right to lead in show, as well as in all other matters of general interest to the industry; but he contended that, as representing the parts and accessories trade, the M. & A. M. was of next importance and should be so recognized.

President Post's report also seemed to intimate that in the event of again participating in national shows, it might be the intention of the M. & A. M. to do so in the role of a "partner." In fact, he used this exact term, adding that the partnership would provide the necessary funds for maintaining suitable permanent offices and render an increase in dues, which he was "tempted to recommend," unnecessary.

In connection with the suggested New York office, he thought that a credit bureau could be conducted to good advantage. The establishment of the office, he said, would relieve the officers of all detail work and result in much good to the organization generally.

Mr. Post also recommended the question of an associate membership, to be composed of jobbers, or those who were termed "combination jobbers and manufacturers," and also trade journals.

He recounted the effective work of the association in securing for its members a fair and equitable division of show space. "Nothing," he said, "better showed the effect of organized effort."

Although the meeting was held at an inopportune time, very many of the members being at Madison Square Garden putting the finishing touches to their exhibits, a representative number was in attendance. Probably the most important work of the meeting was the decision to accept the report of the committee on incorporation, of which W. S. Gorton was chairman. The committee recommended that the organization be incorporated under the laws of Connecticut, which recommendation was adopted.

Mr. Gorton moved also that hereafter the annual meeting be held in the City of New York, during the third week in January of each year, and that an additional meeting be held at such time and place as may be determined by the directors. This also was agreed upon.

Two new members were elected—C. T. Ham Mfg. Co., Rochester, N. Y., and the Chicago Battery Co., Chicago, Ill.

The nominating committee presented twelve names for selection as directors. Of the number the following seven were elected: H. T. Dunn, Fisk Rubber Co., Chicopee Falls, Mass.; P. S. Steenstrus, Hyatt Roller Bearing Co., Harrison, N. J.; Clarence E. Whitney, Whitney Mfg Co., Hartford, Conn.; George L. Weiss, Cleveland Car Specialty Co., Cleveland, O.; William Gray, Gray & Davis, Amesbury, Mass.; H. S. White, Shelby Steel Tube Co., Pittsfield, Mass.; J. W. Gilson, Hartford Rubber Works, Hartford, Conn.; D. J. Post, Veeder Mfg. Co., Hartford; M. H. Moffett, National Carbon Co., Cleveland, and C. S. Mott, Weston-Mott Co., Utica, N. Y.

Later, at the meeting of the new directors, the following officers were chosen for the ensuing year: President, H. W. Chapin, Syracuse, N. Y.; first vice-president, H. E. Raymond, Akron, O.; second vice-president, George L. Weiss, Cleveland, O.; third vice-president, C. E. Whitney, Hartford, Conn.; treasurer, W. H. Gorton, Cleveland, O.; secretary, J. W. Gilson, Hartford, Conn.

Fire Came Near to Columbias.

What might have developed into a disastrous conflagration in the Electric Vehicle Co.'s plant at Hartford, Conn., one afternoon last week was quickly put out by the firemen employed in the building. The workmen on the third floor were hurrying some work, when one of the men ran around the room with a lighted plumber's torch, and as the place was filled with paint and varnish the gasolene in the blower started a blaze. The damage amounted to about $300.

Will Make Electrics Later.

For the present the Tritt Electrical Co., of South Bend, which was incorporated last week with a capital of $100,000, will confine itself to the manufacture of electrical specialties. Later it is its purpose to include in its productions electric vehicles and electrical automobile supplies generally. The officers of the company are B. E. Tritt, president; D. M. Calvert, vice-president; W. B. Pershing, secretary, and C. M. Kreighbaum, treasurer.

Maxwell Seeks Foreign Trade.

The Maxwell-Briscoe Co., through Richard Irvin & Co., New York, are making an active bid for foreign trade. One of their representatives, I. C. Kirkham, is now in London planning the first stage of the campaign.

To Sell Yales in Chicago.

The Yale Automobile Co. is the style of a new concern just formed in Chicago. It will handle the Yale car exclusively. W. W. Tarr is its chief sponsor. A salesroom is now being sought.

Baker Doubles Capital.

The Baker Motor Vehicle Co., of Cleveland, has doubled its capital stock, from $200,000 to $400,000.

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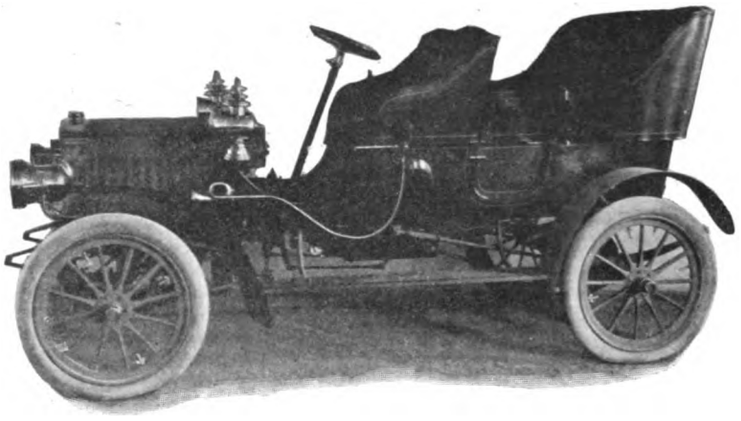
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Looks Good, and is as Good as it Looks.

Here are a Few Features:

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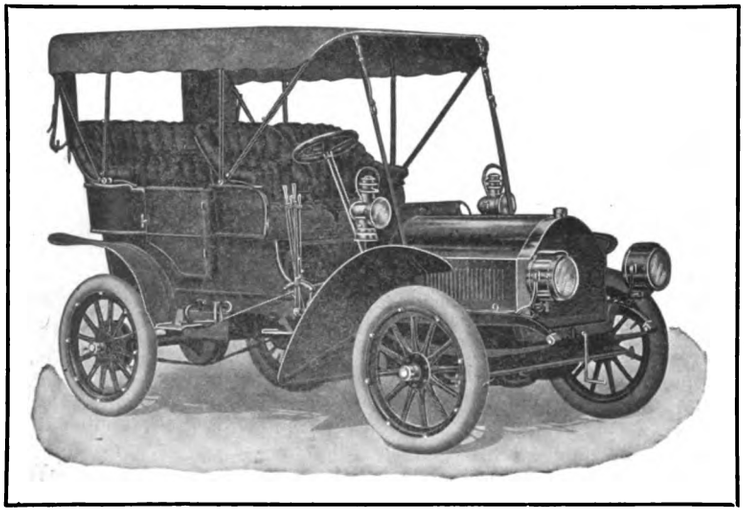
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Beware of the Boom!

Undoubtedly they mean well, but the men who have begun to talk and write of "the arrival of the automobile boom" are unintentionally doing the industry more harm than good. "Boom" suggests inflation, and "inflation" carries with it suggestions of future collapse. A boom would be about the worst thing that could visit the industry, and the men who can head it off when it comes in sight will be the trade's best friends. What is wanted is a slow, strong, steady growth that will endure and be well and deeply rooted. Booms and talk of booms simply create false impressions, and cause fools to rush in where angels fear to tread; disaster always follows in their train.

Now in the Front Rank.

If the show demonstrates anything, it demonstrates effectively that the American car no longer requires odds of the cars of foreign build. There still remain those inclined to assume that the foreign cars are superior, but close questioning does not evoke a single sound reason. Nor can the skeptic who is questioned, as a rule, specify in what particular points the foreign car excels the American article.

It looks as though there were no question about it; it seems clear and well defined that the domestic car fills the wants of this country, with its climatic conditions and bad roads, better than the imported car. There is a long list of American cars that run just as smoothly, just as noiselessly and endure as well as any foreign car. Moreover, it is a fact that the American car is simpler, easier to operate, easier to care for and easier to repair. In fact, as far as one can find out, the foreign car is in the repair department more often than the American car. All admit that it is exceedingly speedy and runs wonderfully while it is running.

There is one feature where the foreigner is probably in advance. That is in the selection of materials which enter the car. He has been willing to take the time to do it. His customer has been willing to pay the price that is necessary to get the best material, and the careful and painstaking French mechanic has made good use of the special alloys now in the market and of the special methods of heat treating familiar to those skilled in the art.

There is a long list, as stated, of American cars that have no startling features about the way their motors are arranged and assembled; but their motors, their transmission and the whole make-up of the chassis show careful consideration, and have resulted in a well balanced, thoroughly practical car.

Of course, these remarks apply to the class of cars having four cylinders as a rule, which is about all that can be compared with the foreign cars, as the foreigners exhibit nothing else. Some of this class of American cars follow closely the lines of the foreign built car, except that in nearly every instance they are simpler. For example, the Haynes, the Pierce, the Cleveland, the Royal Tourist, the Locomobile, the National, the Apperson, the Peerless, the Packard, the Autocar, the Pope-Toledo, the Columbia, the Lozier and the Thomas. There is no question but that these cars behave as well under our conditions as any car in the world. When price is considered, there is two and three times the value in the American car that there is in the imported car; indeed, it is fair to say that the domestic industry has reached that point when the purchase of a foreign car may be said to be merely an indulgence—the indulgence of wealth.

It gives the very wealthy a chance to have something that his neighbors cannot possess—that vicious spirit of rivalry which exists in the society of our big cities to a marked extent.

The show demonstrates that there is actually no sound reason why any American should purchase a foreign built car, unless he wants a special one, and then, it may be added, if he would pay the American manufacturer as much as he pays the foreign one it could be obtained right here. It would be odd indeed if the American designers and mechanics, who evolved and produced so much of the machinery that has made the foreign car possible, could not, when they apply themselves to the task, best produce the wares the machinery was designed to produce.

There is a class of cars at the show which cannot be compared with foreign cars because Europe holds nothing with which they may be compared. These cars fill a want in the United States that is tremendous. The numerical sales of the medium and low priced car are away in excess of the high priced. The volume of business in dollars and cents is even greater. The relatively small American car offers greater value for the money than is offered in any other country on the globe, and in this class are such wonderfully successful cars as the Olds, the Rambler, the Cadillac, the Ford, the Knox and the Buick.

These machines are seen everywhere—they are reaching into all the markets of the world. They are understood by every repair man. The care of them is reduced to a minimum. Their mechanism has been simplified to the extreme limit. They can be operated by any one with average intelligence.

If too much is not required of them and an attempt is not made to get them to do what a high powered, high priced car will do, they will meet all expectations and every call of the man of moderate means.

Stability of the Industry.

For an infant industry, born and brought up in less than a decade, nurtured by bigoted prejudice on the part of those blind to its importance and world-revolutionizing mission, and struggling and kicking against its own

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numerous shortcomings as well as active outside opposition, the automobile youngster, as shown in the full strength of its early youth at Madison Square Garden this week, is entitled to crow long and loud. It has taken its place among the industrial powers—not like those others of the same appellation, deriving its life from water and wind and fostered by silver lubricated channels of legislation, but upon a solid foundation of its own erection, laid through experience and based upon healthy competition. Millions of capital and thousands of operatives but inadequately describe the tremendous interests now depending solely on the automobile as their raison d'etre, and, were such a thing possible, its sudden fall would bring about an economic disturbance but little short of a widespread panic.

As yet in the very first flush of its young days, it has assumed proportions which but presage its growth in years to come, and to predict the extent of this would be to attempt the impossible. And it is a matter for great congratulation on the part of all concerned that its advance to the present stage has not been of the mushroom order, liable to be swept away overnight, but on a basis regulated more by the economic safety valve of popular demand than the average industry which has been made, put on its feet and climbed skyward on a rocket in a few years.

Overcapitalization was greatly feared two years ago, and the number of concerns rushing into the business of building cars threatened to flood the market with cheap and worthless automobiles and involve themselves and others in bankruptcy. At the time this loomed on the horizon as an evil of no mean proportions, and while it did not disturb prominent interests to any noticeable extent, there was a natural feeling of unrest, coupled with a desire not to have the industry come in for any unwelcome publicity, such as would be brought about by the failure of a number of such concerns at one time. But the "survival of the fittest" has taken care of this influx, and there are many sadder and wiser people to-day who have come to a realization of the fact that a serviceable car cannot be built for a song, and that a cheap and flimsy affair is not saleable to a paying extent at any price.

There are others, in addition, who started in to do large things in the shape of $3,000 and $5,000 cars that were going to make their builders' fortunes, such was the attraction the industry held for capital, but they have come and gone, and none the wiser but themselves. Five thousand dollars seems a great sum of money to the average man to put into an automobile, and the popular impression is that a very large slice of the price stands for profit pure and simple; but the gentlemen in question found it was not so, to their cost.

The industry still holds out a powerful magnet to capital looking for paying as well as conservative investment, but the get-rich-quick investors are bound to be disappointed in more ways than one. There is still plenty of room for legitimate expansion, but not for the boomer, whose only object is to squeeze out all there is in it during the short time he thinks things will last, and then stands from under, letting the other fellow pay the freight. But the automobile industry, although only an infant of five shows, is in it to stay.

The Ignition Problem.

Seemingly too little attention is being paid to the matter of improvement where the application of electricity to the gasolene car is concerned. True enough, it forms a very small part of the motive power, and is usually the last item to be applied; probably this is the moving cause of its being also at the tail end of consideration by many, but the part it plays is so large as to overshadow almost everything else but the carburetter problem, and in the matter of vexatious mysteries both may be classed together.

It is safe to say that of all the problems confronting the builder of motor cars, this has in the past few years probably come in for less serious consideration at his hands than any one other; due no doubt, to the fact that a reasonable measure of success had been attained, and as anything better involved a greater expenditure, a halt has been called at this intermediate step and many have gone no further. It has proved itself "good enough," at any rate, and certainly "sufficient unto the day," etc., "so what's the use of bothering about it further." Hence the matter of improvement along this line has been left entirely in the hands of those who live by it—the makers of batteries, generators and similar apparatus, and the car builder is now usually only too willing to let his customer take his choice. Both the high tension magneto with synchronous distribution, and the low tension type for make and break spark—forming as close an approach to self-contained simplicity as has yet been evolved—have been old stories abroad for some time past, but the instances in which they have been taken up here could be enumerated on the fingers of one hand last year, and probably the two would yet suffice to cover all.

COMING EVENTS.

Jan. 11-24—New York, Importers' Show, Macy's Dry Goods Store, top floor.

Jan. 14-21—New York, National Show, Madison Square Garden.

Jan. 19—New York, Superintendents' and Engineers' Branch of the Association of Licensed Automobile Manufacturers, meeting.

Jan. 23-28—Ormond-Daytona, Fla., third annual speed carnival.

Jan. 23-28—Philadelphia, Automobile Show.

Feb. 4-11—Chicago, National Show, Coliseum.

Feb. 13-18—Detroit, Automobile Show.

Feb. 20-25—Cleveland, Automobile Show, Gray's Armory.

Feb. 27-March 4—Toronto, Automobile Show.

March 6-11—Buffalo, Automobile Show, Convention Hall.

March 13-18—Boston, Automobile Show, Mechanics' Hall.

March 13-18—Boston, Importers' Show, Symphony Hall.

March 27-April 5—Washington, Automobile Show.

One very good reason for this lies in the fact that until quite recently there was not a magneto produced in this country that merited the name, and the imported ones not only had the disadvantage of being very high-priced, but, in the opinion of many who saw them, the distributing apparatus too closely resembled the interior of a watch—"too much jewelry in the box," was the usual verdict, and consequently they did not find favor except in isolated instances.

There is every reason to believe that had this exceedingly important part of the motive power received the amount of attention that has been devoted to the problems of transmission, carburretion and similar knotty ones by the leading lights of the industry during the past few years, it would be in a much more advanced state to-day. The fact that these authorities are, in the majority of instances, better versed in things mechanical than electrical, and that the intricacies of alternating current generation have not been gone into very deeply by them, may account for this in part, while the further fact that no surplus of highly skilled talent of this order is in evidence among the manufacturers of accessories is doubtless responsible for the remainder. But all things will come in time, and trips of several thousand miles without ignition troubles show that much may be accomplished with the imperfect apparatus now available.

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A. C. A. AT THE WALDORF

The Mayor and Sir Thomas Dewar the Guests of Honor—Both Speak in Happy Vein.

"One touch of automobiliousness makes the whole world kin." This was the opening flash of that Chauncey Depew of the automobile world, Winthrop E. Scarritt, as he took the chair at the annual banquet of the Automobile Club of America at the Waldorf-Astoria on Tuesday evening last.

The sally tickled the risibilities of the two hundred prosperous and well groomed men who fringed the tables, and, as one of them afterward laughingly said, "That one witticism was sufficient to obtain for Mr. Scarritt forgiveness for the setpiece which he has so often delivered, that one beginning: 'The curiosities of to-day are the commonplaces of to-morrow,' and so forth."

As toastmaster Mr. Scarritt was in good form, and performed the offices in his usual graceful fashion. The two guests of honor, Mayor George B. McClellan and Sir Thomas Dewar, the latter in particular, shared laurels with the toastmaster.

Sir Thomas is a witty speaker, and adept at turning deft compliments, and is no "slouch" as a gentle satirist. In the course of a bristling speech he said that he looked to America for a tire that would not burst, a carburetter that will be reliable and a chauffeur that will work when his master is not looking. He admitted that he had been surprised at the progress shown in automobile construction in this country, and turned a pretty compliment by stating that he trusted the industry would continue to flourish, if for no other than the selfish reason that England expects to eventually find here the best to be had in automobile manufacture.

Mayor McClellan informed his hearers that he was present in a dual capacity, one to enforce the law and one to obey the law.

"The motor car," he added, "has surely come to stay, and no longer is the once familiar cry of 'get a horse' heard when one travels in the eastern part of the city. Indeed, it is possible to go almost anywhere now, and only be stoned occasionally. You still have your oppressors, and as a bit of interesting information, let me say right here that a few days ago I received a petition from a very respectable body of taxpayers, begging that they might have better police service as a protection against burglars and motor cars."

This pointed reference to the agitation against motor vehicles by the West End Association evoked sallies of laughter.

"What the motor car industry really needs," continued the Mayor, 'is an engine that is cheap, simple and strong. By hard experience I know the difficulty of securing all of these attributes, but I know that American ingenuity will eventually succeed in giving us the ideal motor car."

Referring to the speed laws, Mayor McClellan said that if changes were desirable [illegible] nobile members were the men to obtain proper concessions, but that as long as the present law was on the statute books he would do all in his power to enforce it.

The banquet, which took place in the Astor Gallery, was presided over by Harlan W. Whipple, president of the organization, and among others at the speakers' table were Winthrop E. Scarritt, first president of the Automobile Association of America; Dave H. Morris, president of the Automobile Club of America; Sir Thomas Dewar, John Farson, president of the Chicago Automobile Club; Judge W. H. Hotchkiss, president of the Buffalo Automobile Club; Elliot C. Lee, president of the Massachusetts Automobile Club; Dr. W. E. Milbank, president of the Albany Automobile Club; W. C. Temple, president of the Pittsburg Automobile Club; Asa Goddard, president of the Worcester Automobile Club; E. Schriver Reese, president of the Cleveland Automobile Club; Dr. Julian A. Chase, president of the Rhode Island Automobile Club; W. L. Brown, president of the Syracuse Automobile Club; Alfred Wilmarth, president of the Long Island Automobile Club; H. S. Woodward, president of the Rochester Automobile Club; F. E. Constans, president of the Brockton, Mass., Automobile Club; G. F. Farrington, president of the Automobile Club of New Jersey, and Windsor T. White, president of the National Association of Automobile Manufacturers.

Addresses also were made by Messrs. Morris, Temple, Hotchkiss and others.

When Show Business Was Forgot.

Among the minor functions attendant on the New York show was the E. Schwartzkopf breakfast on Sunday and the dinner of the New York Motor Club at the Hotel Astor on the same evening. Sir Thomas Dewar was the most conspicuous guest and speaker on both occasions.

Schwartzkopf publishes an alleged automobile daily during the week of the show, and, it is said, gave the breakfast in order to ease his conscience. Chief among those invited to attend were those who have advertising or influence to dispense, but a number of newspaper men and a few club officials were included in the gathering to leaven the mass.

The dinner of the New York Motor Club was in the nature of a reception to Sir Thomas Dewar, who was induced to present a cup and to come to this country by a fellow countryman, who originated the club in question and who seems to be acting as a sort of trustee and press agent for Sir Thomas.

The N. A. A. M. smoker on Tuesday night was a huge, well attended and well ordered affair. The talent provided was good, ditto the tobacco, ditto the edibles, ditto the management, of which Percy Owen was the life.

Law to Confine Cars to Cities.

Senator Jetton, of the Tennessee Legislature, has made his bid for fame. Among several fool bills that have been introduced into that body is one, of which he is the proud sponsor, limiting the use of automobiles to cities of nine thousand inhabitants and over.

A. A. A. IN BUSY SESSION

Officers Elected and Much Good Work Performed —Temple Now Head of Racing Committee.

Harlan W. Whipple's re-election as president, the appointment of W. C. Temple, of Pittsburg, as chairman of the racing committee in place of A. R. Pardington, who because of not being in sympathy with the president declined re-nomination, and the rejection of all intermediate mile records made during 1904 were the important actions at the annual meeting of the American Automobile Association and its directors, held on Tuesday last, 16th inst., in New York.

There was no opposition to the regular ticket, and all the officers that will serve in 1905 held the same positions last year. It was reported at the meeting that forty-one clubs now belong to the A. A. A., with a total membership of 4,000. There are also 200 individual members.

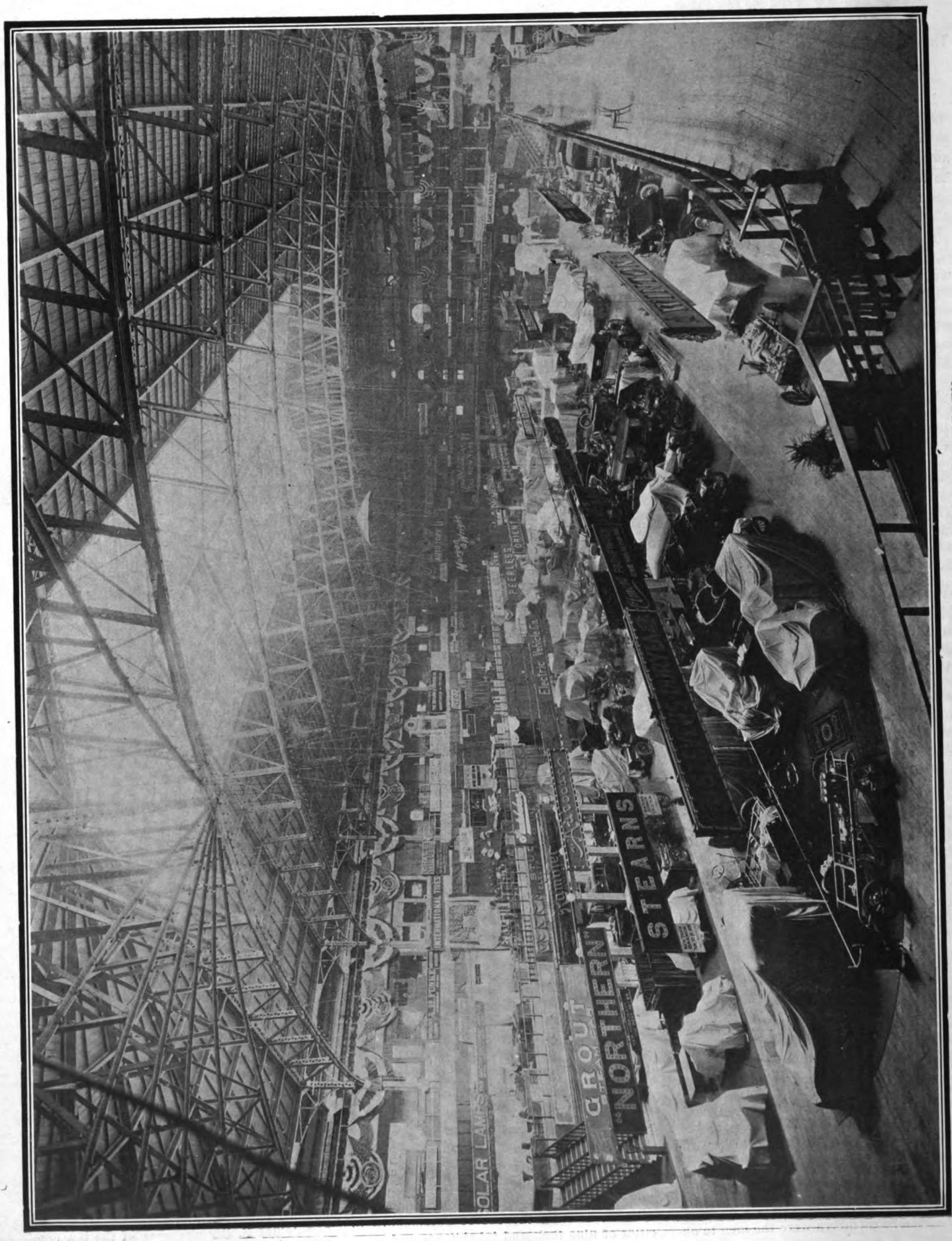
The old racing board reported that they had decided to reject the intermediate miles made by Oldfield, Kiser and others last year, and that the accepted mile figure is 53 seconds, made by Oldfield at Los Angeles, December 21. They recommended to the new board that no intermediate mile times be accepted in the future. Oldfield's records of three miles in 2 min. 39 4-5 sec., of nine miles in 8 min. 4 sec. and fifty miles in 1 hour, 12 min. 40 3-5 sec. were accepted. The 100-mile record made by E. H. R. Green's chauffeur, Oliver Savin, at Dallas, Tex., was recommended for acceptance by the old board.

Mr. Temple's associates on the racing committee for 1905 will be W. K. Vanderbilt, Jr., T. M. Hillyard and George Isham Scott, of New York; H. L. Bowden and William Wallace, of Boston; George L. Weiss, of Cleveland; F. C. Donald, of Chicago; R. L. Lippitt, of Providence; E. H. R. Green, of Dallas, Tex. Technical advisers, A. L. Riker, E. T. Birdsall and Roland White.

The officers elected were: President, Harlan W. Whipple, Automobile Club of America and Automobile Club of New Jersey; first vice-president, John Farson, Chicago Automobile Club; second vice-president, Judge William H. Hotchkiss, president of the New York State Association of Automobile Clubs; third vice-president, Dr. Millbank Johnson, Los Angeles, Cal., Automobile Club; secretary, C. H. Gillette, Automobile Club of America; treasurer, George E. Farrington, president of the Automobile Club of New Jersey; directors, Elliott C. Lee, Massachusetts Automobile Club; William C. Temple, Pittsburg Automobile Club; Dave H. Morris, Automobile Club of America; A. R. Pardington, Long Island Automobile Club; R. L. Lippett, Rhode Island Automobile Club; Windsor T. White, Cleveland Automobile Club; E. M. Steck, Florida East Coast Automobile Association.

Albert R. Shattuck was appointed chairman of the good roads committee, Augustus R. Post chairman of the touring committee and James B. Dill chairman of the law committeee.

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GENERAL VIEW OF THE SHOW IN MADISON SQUARE GARDEN.

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Show Marks Start of a New Era.

Giant Strides the American Industry Has Made Clearly Shown and its Product Proved the Peer of Any in the World—Success of Show Unbounded from the Beginning—All Attendance Records Broken.

Although they may never meet again—that is, in the promotion of a show, they, that is, the "triple alliance," are certainly going out in a blaze of glory.

It is the third show under the auspices of the "triple alliance"—the National Association of Automobile Manufacturers, the Automobile Club of America and the Madison Square Garden Co.—and the force of the whirligigs of time, men and patents requires that it be "three times and out," and that it is a case of "It may be for years, and it may be forever," so far as very many of the exhibitors at the present show being again gathered under the roof of Madison Square Garden, the sensationally altered show situation strongly suggests.

That the show which opened on Saturday night is by far and in every way superior to all those that have gone before admits of no possible argument. It is not only the best show and the largest one, but the brightest and busiest. The demand for space forecasted a bustling state of affairs, but it is safe to say that comparatively few conceived that the exhibition would attain such dimensions or arouse such intense interest—for intense interest is the word that best describes the situation.

The attendance on the part of both trade and public has been astonishingly large—all previous records have been knocked to smithereens. At night, so crowded are the aisles that progress is almost impossible. There is nothing left for the spectator to do but float with the human tide that surges up one aisle, down the other and back again. In the morning hours, given over to the trade people only, the crowd is almost as dense, although not a few of the manufacturers who are exhibiting have very largely or wholly disposed of their outputs, and many of the dealers who are in evidence have fully arranged their lines for the season about to open. It appears almost that every mother's son of them felt it a bounden duty to attend the show. If a roll of the trade, both manufacturers and retailers, could be called, it would probably be found easier to enumerate those who are absent than those who are present.

The volume of business transacted is in keeping with the attendance. It is quite the busiest public function of the kind that can be conceived.

Summary of Vehicles on Exhibition.

Gasolene—	
Six cylinders	2
Four cylinders	96
Three cylinders	5
Two cylinders	50
One cylinder	125
Total	177
Steam	4
Electric	31
Total cars	212
Chassis	40
Motor bicycles	21

In general appearance this show does not differ radically from its predecessors. The demand for space required that individual exhibits be smaller than in the past, and for this reason the booths are unduly congested. The manner in which some of the exhibitors were able to find room for the number of cars they display must have necessitated much study of angles and much use of tape measures.

Due to the rule forbidding the use of platforms or railings, the shows in Madison Square Garden have never been rightly termed picturesque. That wealth of decoration and elaboration of signs which make the foreign shows so pleasing to the eye have been absent. This year, however, a few of the exhibitors stretched the letter of the regulation and "defied the lightning," and a touch of the ornate is the result.

T. B. Jeffery & Co. are showing their Ramblers in a space which stands out like a "house afire," because of the white and gold pillars surmounted by opaque globes that mark it.

The Packard display also is marked by pillars, shorter and of more generous proportions that those of Jeffrey & Co., and these, too, are surmounted by globes.

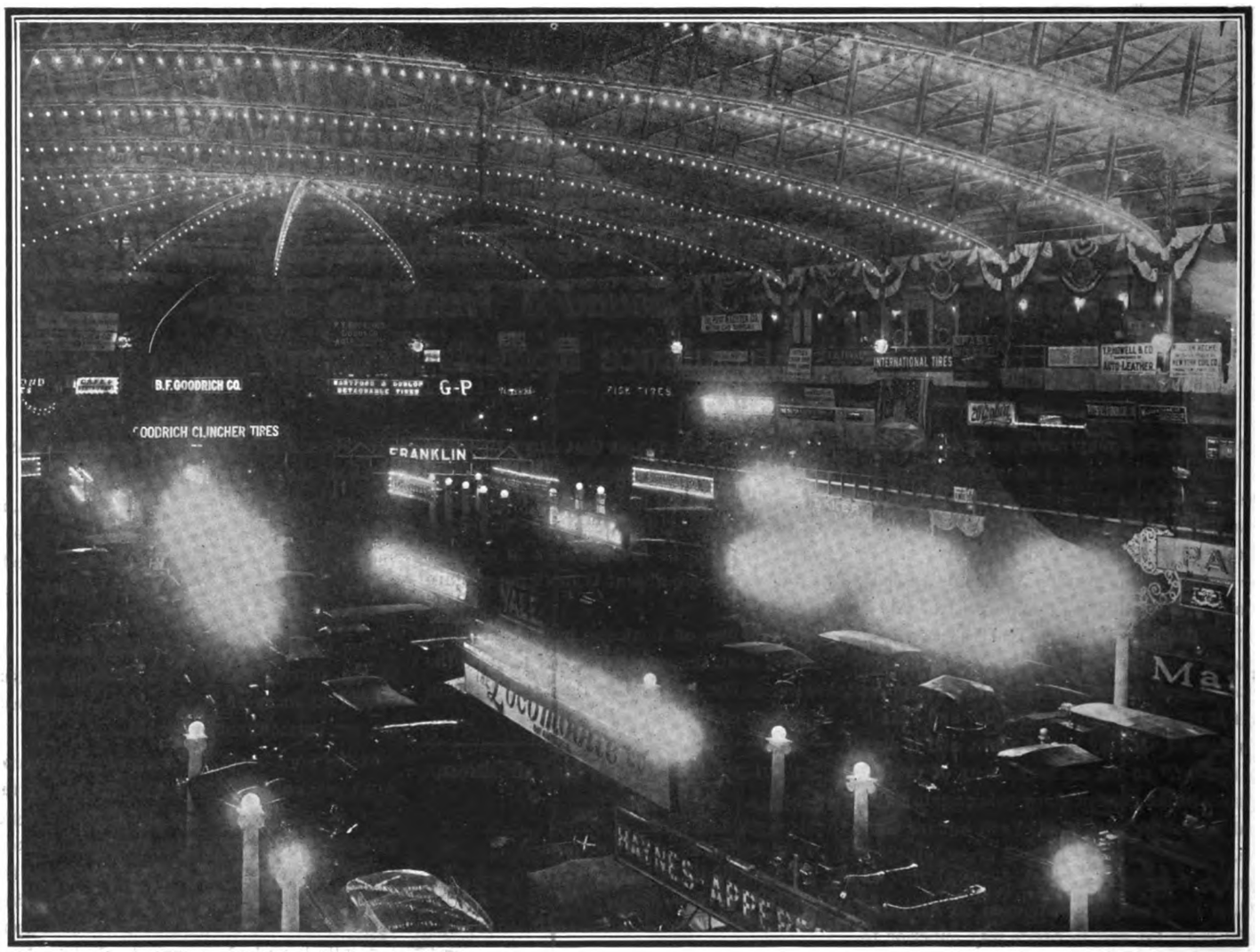
At the Ford booth, the ends of golden scroll work rest on tall pillars, and the top of the sign is surmounted by a silvered eagle, perched in quiet rather than defiant attitude.

The beauty or picturesqueness that the show holds is apparent at night. It is then at its best. For the first time the exhibitors generally have had recourse to electric signs, and the effect is such that the light studded dome of the Garden itself is hardly necessary. The signs are of every size, shape and hue.

At one end of the Garden the Edison people have spelled out, in lights of red and gold, the virtue of electric vehicles, and the fact that they themselves supply current for such conveyances. At the other end the B. F. Goodrich Co. fling their name to the public in blazing letters of heroic size. In its well known script, the Electric Vehicle Co., in red lights, spells "Columbia." Pierce spells his name in white globes, the familiar arrow which pierces the name being fashioned in red lights.

Around the title "Orient," lights, which are alternately flashing red and green, revolve unceasingly. The name "Mitchell," in flaming green script, is suspended in midair. The Pope and Winton signs are bordered with electric embroidery of white globes. Olds, Royal, Northern, Peerless, Packard, Corbin, Baker, in fact nearly all of the ex-

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NIGHT VIEW OF THE SHOW AT THE GARDEN.

hibitors on the main floor, employ electric signs.

On the elevated platform, whereon all of the better known tire and accessory manufacturers are neighborly located, there is also a wealth of electric light. "Diamond tires" are spelled in green globes. The "G. & J. Tire Co.," in the style of lettering made familiar by this concern, spell their name in white. The same is true of Hartford and Dunlops, while the "Fisk tires" is fashioned in red lights. Morgan & Wright, apart from their neighbors at one corner of the platform, have arranged their name in italic letters of distinctiveness and of heroic size. The name rests on a background of dark maroon, and no eye can escape it.

By comparison with the exhibits of cars and other wares, these tire booths are distinctly restful. None is congested with the wares made by the respective manufacturers. There are simply a few tires for demonstration purposes, a few pieces of office furniture, a carpeted floor, a velvet background, and they are all sufficient. There is plenty of agreeable elbow room and breathing space.

Such familiar names as "Solar" and "Veeder" likewise blaze out, and up aloft, where the many and sundry are gathered in the galleries, there also are electric signs, not so large nor so handsome as those which shine below them, but they are electric signs just the same.

In the restaurant there is another blaze of light, and in the rather forbidding and low ceilinged basement, called for politeness sake exhibition hall, such brightness is also to be found; indeed, as has been suggested, it is easily and literally the brightest automobile show that has ever been held, on this side of the water at least. Here and there is a potted palm, but these are not numerous.

Crowds and color, however, are merely the frames of the picture. The cars, of course, constitute "the thing," and the promise of them given by advance information amply is borne out.

The show is, as the Motor World styled it last week, a show of American achievement. The fact is evident to all. It marks the beginning of the end of the imported car. The American manufacturers who conceived and designed much, if not most, of the machinery that enabled the foreigners to produce the cars that have been the world's standard of excellence have proven that, as they made the machinery, so also they can turn it to the same advantage in producing the wares they are fashioned to produce. Evidence of this is on every side. The improving hands have been strong, and as skilful as they are strong. It is not contended, of course, that those American cars which sell for $1,000 or $2,000 are the peers of the foreign cars which sell for three, four or five times as much (a mistaken idea that is possessed by all too many), and that is flung back to the hurt of the industry, but at equal prices, or even for less money, no American need be ashamed of the product of his country or hesitate to make a selection from the diversity that is offered him.

This remark or opinion is so general that it no longer excites argument, and the truth of it is admitted even by some of those who have been inculcated with the germ of foreign superiority. Even the snob whom the Motor World quoted last week, who defended his purchase of a foreign car on the ground that he "did not purchase his clothes in Bax-

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ter street," has placed his order for an American vehicle.

One of these small, but not unexpected instances, that show how great is the advance that has been made occurred at the exhibit of the Manufacturers' Foundry Co., of Waterbury, Conn.

Displayed on the stand are two specimens of American cylinders cut sectionally. Among the many who stopped to inspect them was a Teutonic appearing individual, who evinced more than ordinary interest. This interest finally induced him to bring out a pair of calipers, with which both cylinder sections were carefully measured.

"A clever idea, that of displaying a German Mercedes cylinder alongside the American article," remarked the Teuton, whose accent betrayed his origin, as he put away his calipers, and hastened to add that he had been once connected with the Mercedes factory in Germany.

"But neither of them is a German cylinder," said Manager Beach of the Foundry company, to whom the German's remark was addressed. "They were both made in our foundry in Waterbury."

"Remarkable! Remarkable!" was the Teuton's response. But he quickly sought to cover his tracks. "They look like the Mercedes product, but, of course, Americans never will be able to make cylinders equal to ours," he retorted. "You will always have to import them, the same as the makers of the American Mercedes have done in attempting to reproduce the German car. The cylinders in the American Mercedes show that they are the imported article."

"But they are nothing of the sort," responded Beach. "They were made in our foundry in Waterbury."

"W-hat!" ejaculated the astonished German. "It is remarkable—remarkable!" was all he could say.

This is but one little instance of many that serve to show how great is the extent of American achievement and how thoroughly the American industry is coming into its own.

Up to Wednesday night it is estimated that the attendance has been fully 40 per cent. greater than last year.

The Show from the Viewpoint of the Engineer.

By HENRY SOUTHER.

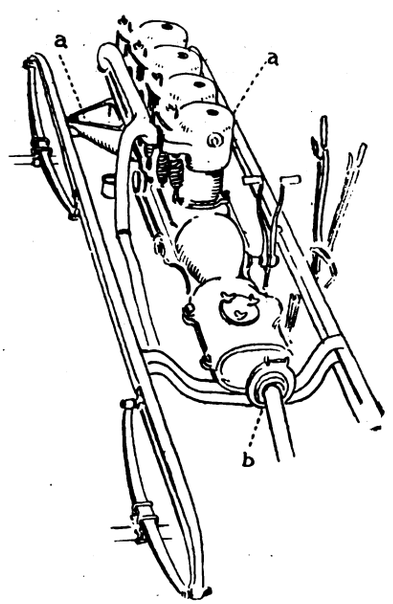
To the observer familiar with mechanical matters relating to automobile construction the New York show of 1905 furnishes much food for thought.

It shows the wonderful power of the American mechanic to evolve a piece of machinery from a crude, ill-proportioned machine to a finished and well-proportioned one.

By proportions, the general external appearance of the car is not referred to. It is the proportioning of the mechanical details in relation to each other; the size of the axles as compared with the loads they must carry; the proportions of the steering gear, the rods, the pivots, the steering arms and all that. Wonderful advances have been made, and well balanced machines in this respect are almost universal. Tremendous advances ever since the New York-Pittsburg endurance run of last summer are evident.

There are one or two instances in which it looks as though the designer had crowded all the metal he possibly could into some parts of the mechanism, many of them being extremely large for the work they must perform and the complication of arrangement being something wonderful to look at. However, these one or two cars are the exception, and may almost be classed as freaks.

The American mechanic has not been slow in following the Frenchman with his beautifully polished exhibition chassis. The idea of the American in years past has been to show what he has to sell, and not what he can do in the way of polishing and finishing a machine for show purposes only. The public has forced the American, however, to build just such uncommercial machines, because the public is easily deceived by fine finish, and believes that a company which can make the most handsome exhibit along these lines is necessarily the company which will make the best finished stock product. Consequently the number of exhibition chassis shown is very large, their quality very high and the cleverness used in showing the construction is of a very high order. Sections of carburetters, clutches, transmission, engine



Stevens-Duryea Transmission.

valves showing operations are in evidence. If the ordinary observer uses his time to advantage he will learn much from such sectional exhibits about how an automobile really operates, while the motorist himself may even learn so much that he will understand his car better the coming season and get better results out of it because he does know more. In other words, the show is of great educational value, and its value because of this should not be underestimated.

Another thing evident to the skilled observer is the potency of what may be termed fashion—that certain fashionable design that seems to be acceptable to the buying public at this time in the way of motors, arrangement of engine, transmission and other vital parts.

In a way this prevailing fashion is a bad thing. An engineer may have the best reason in the world for departing from this design. He might be able to increase the efficiency of his motor, cut down fuel consumption and get many other advantages if the commercial end would allow him to. But commercial end says, "We cannot allow you to do this; we could not sell the cars. The public has got its mind set on certain prevailing designs, and would not buy any piece of mechanism that did not have, approximately, the recognized exterior form and dimensions."

Marked examples of departure from the accepted arrangement are seen in the four cylinder Stevens-Duryea. Its flywheel is at the front end of its engine, consequently the clutch arrangement, transmission and whole train of mechanical parts from engine to bevel gears are absolutely different.

The Peerless, in the shape of its cylinders, position of inlet and exhaust valves, also has departed from what may be termed the "fashionable."

In these instances their designers have real reasons for these changes. It remains to be seen whether the public will accept radical departures and buy as readily as it will buy the old accepted forms.

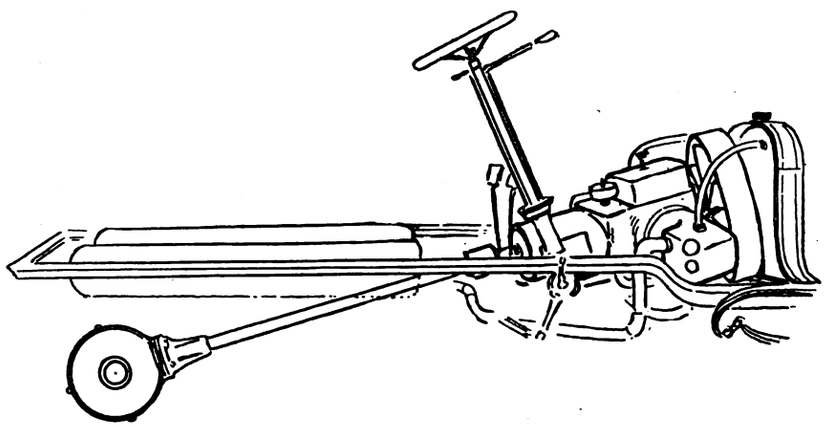
ENGINE LOCATION.

Engines are found in nearly every available place on the chassis, a single cylinder and a double cylinder opposed under the body, or two cylinder opposed under the hood at right angles to the body, the four cylinder vertical

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across the body under the hood and in line with the body under the hood, and the two cylinder vertical under the bood, across and in line with the body.

In the Northern two cylinder opposed car high up. because the entire engine is above the frame, under the hood is found the most marked example of bringing the crank shaft into such a position that it points directly at



Arrangement of Northern Motor and Driving Mechanism.

the rear axle, requiring no motion in the universal joint in the propeller shaft at all. The fly-wheel on this engine is at its front end, quite above the frame. The flywheel is very large in diameter, and the spokes are in the shape of a fan. The crank shaft carries at its rear end, and in contact with its engine case, the transmission gearing, which is of a modified planetary type. This system gives only two speeds ahead and one reverse, but it is exceedingly simple and strong. The Northern engine is supported at its two cylinders on top of the frame and at its third point of suspension at the rear of the transmission case.

In the Stevens-Duryea four cylinder car is a most striking departure from ordinary practice in the location and form of the engine, the clutch and transmission gears. In the first place, the flywheel is at the front end of the crank shaft. The engine is supported by a frame engaging with the side members of the chassis. It stands in a vertical position quite like others, but its crank case, its clutch case and its transmission gearing case are continuous, supported at one point only, at the rear end of the whole system. This gives the three point suspension, a most desirable feature, and a neat appearance to the whole arrangement.

GOVERNORS.

Discussion with the engineers of the various manufacturers shows widely varying difference of opinion in the matter of governors for large cars. Some are perfectly confident that a governor that will prevent the car from "racing" when suddenly released from its load is an absolute necessity. Others are of the opposite opinion, that a governor is an unnecessary complication, and that there is no trouble going to arise from the absence of a governor of any kind, that when the clutch is opened and the engine released from its load the throttle lever may be returned to the desirable point so that the engine may run slow. Such prominent makers as the Pope-Toledo people and the Pierce-Arrow are radically opposed in this respect, the Pope-Toledo having abandoned the governor, believing it to be of no use, while the Pierce-Arrow retains it and depends upon it.

The types of governors are many where they exist. There is the mechanical ball governor, flying out under spring tension, some of them adjusted at the factory once and for all at a certain speed, others having variable springs, so that the operator may vary the spring tension from the seat and set his car at a slow or rapid speed. This seems to be a most desirable feature. The Winton car depends upon its air governor. When the machine begins to race the air pressure in the system prevents the valves from opening and slows the engine. The Cadillac circulates oil, working against a piston controlling the throttle in the carburettter. When the engine begins to run fast the oil cannot bypass fast enough, pressing on the pistons and closing the throttle. If the car is running along with the governor set and meets an obstruction or hill the oil pressure is diminished, the throttle opens and the car maintains its even speed.

Several builders show cars without governors, but with a device which prevents "racing" of the engine when the clutch is released. This safeguard is brought about by a lever working from the clutch lever to the throttle. When the clutch is opened it automatically closes the throttle to a certain desirable point. This does away with all danger of "racing" as a result of the opening of the clutch.

There is no doubt but that a skilled operator can run a car without a governor, but it is also certain that there is one more thing for the operator to think about when he is busy thinking about other things. There are times when an operator's hands and feet are rather busy meeting an emergency. At such a time if he has his clutch open for only the smallest part of a minute the engine increases its speed without the governor to a dangerous extent, whereas if there were one, a governor would prevent it.

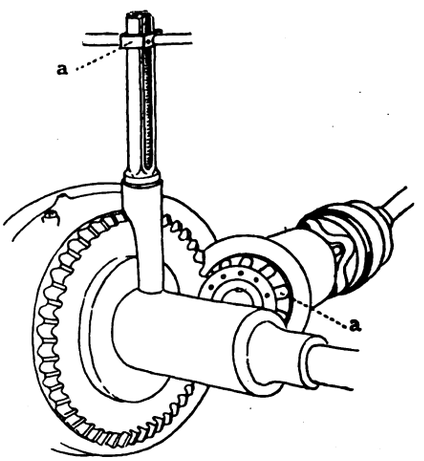
TRANSMISSION.

On the large cars by all means the greater proportion of them drive at high speed direct, without any gears in the driving train working, except the bevel gears. The counter shaft in the transmission case may be idle or may not, either system giving perfect satisfaction. About the only exception to the sliding gear transmission is the Winton and the Cadillac—that is, in the large cars. The Winton uses its old type of cone clutches, individual clutches being used for all speed changes; it is to be added that it is very cleverly worked out.

The Cadillac people have done a daring thing in using the planetary system for their four cylinder 25—30 horsepower car, with three speeds forward and a reverse. They have certainly gone in the right direction in using tremendously large dimensions. This will lead to success, if anything will, in this system and in transmitting so much power.

The Knox people on their large cars also still retain the planetary system. It runs in heavy grease, and all noise is thus eliminated.

There seem to be no radical changes in the sliding gear transmission. Generous gears and dimensions are the rule. Carefully hardened gears are universal, and the result will undoubtedly be even more satisfactory than in the past. Perfectly operating clutches have made the sliding gear a very satisfactory mechanism.



Haynes Roller Drive.

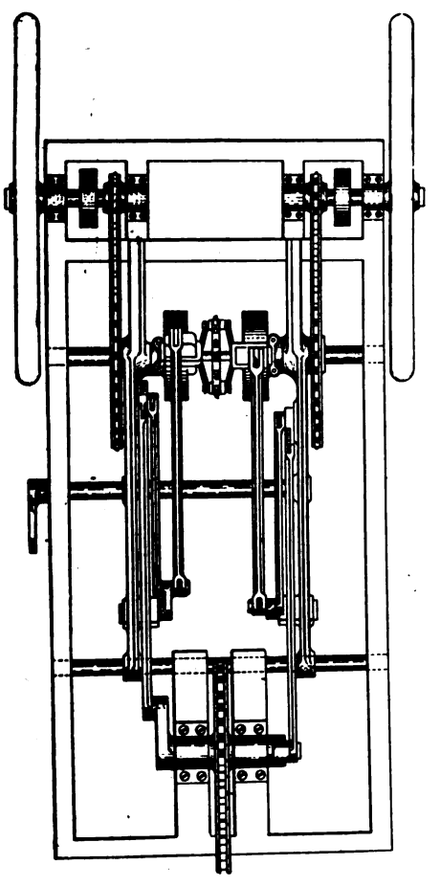
In the four cylinder Haynes is found a transmission which is apparently a sliding gear, but which differs from all others in that all the gears are absolutely idle when the car is on high speed and driving direct. Not only are they idle, but they are without motion. This is accomplished by a patented device and by means of ratchets, which work automatically and the pawls of which engage only when called upon to do so by the shifting of the gears.

A novelty in the way of drives is shown in the Haynes-Apperson exhibit. To all external appearances it is a bevel gear, but, in fact, it is one of the oldest forms of gearing in history, or rather a modern adaptation of it. The large gear resembles a sprocket with the teeth turned over sidewise, so that they en-

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gage with a pinion which consists of two flanges carrying hardened rollers between them. The action is very much like that of a roller chain, except that the chain is wrapped tightly around the pinion and bears upon the sprocket teeth direct. This set of gears transmits the power from the 35—40 horsepower four cylinder Haynes-Apperson engine successfully, quietly and with good endurance. It goes without saying that it runs in a bath of oil.

Up in the gallery, in an obscure corner, is found a working model of the Custead transmission, which is something distinctly new. By means of connecting rods from a main engine shaft motion is transmitted to regular locomotive links. By means of a lever



Custead Variable Transmission.

these links are thrown into long or short strokes. On these links are grips which engage with pulleys, not by means of a ratchet, but by a form of ratchet clutch. These pulleys are on the same shaft with a sprocket or sprockets, which transmit the power to the wheels in the ordinary way. The speed may be from the slowest possible visible motion to anything within the limits of the strength of the mechanism. Reversing is simple and instantaneous. It looks as though, with proper handling and careful development as to dimensions and materials, this new system might be worked up into something valuable. It is well worth the inspection from all skilled mechanics; the layman would not understand it.

Outside the specifications there is nothing startling in the way of the main drive for the car.

The two chain type is probably most evident for heavy cars. The bevel gear is a great favorite with medium weight cars, and finds some users among the heavy weights. The simple single chain drive is on all the runabouts, almost without exception. It naturally finds a place here because of low cost and simplicity. The roller chain is in almost universal use, and the block type is difficult to find and is in use on few cars, if any.

While it may not be startling, it is of no small importance and worthy of remark that some of the prominent makers have been clever enough to introduce the highest class of heat treated nickel steel into the shafts of their transmission gears. They have realized the fearful strains that come upon the parts, and know that even with the best of dimensions and design failures can take place. It is usually through the ignorance or carelessness of a driver, and at such a time, with the full power on, the engine running at full speed and a quickly engaged clutch puts the whole strain suddenly onto the shafts.

CARBURETTERS.

It looks as though the automatic carburetter that takes care of itself at high speeds, low speeds, under heavy hill climbing conditions and under every other condition, has about reached its limit. The carburetter may be found that will operate fairly well under all these conditions, but no carburetter can be at its best under all of them. A driver of a car ought to be in a position to be able to adjust his carburetter so as to meet extreme conditions and variations.

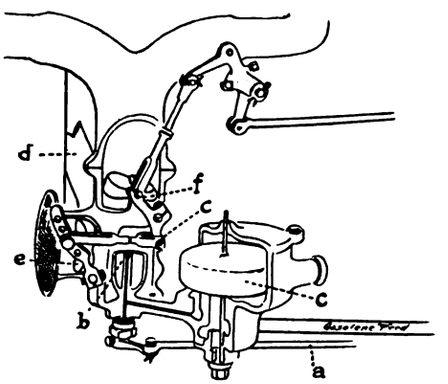
The water circulation about the carburetter is not very much in evidence, which shows good sense on the part of the designers in not adding a complication, which is of very questionable benefit. Instead, hot air is being conducted to the jet of many of the cars, and it is right in principle.

The Columbia carburetter of the Electric Vehicle Co., here illustrated, is a direct departure from the automatic principle. A lever on the dash, A, permits the variation of the size of the jet, B, admitting gasolene to the carburetter from the float chamber, C. This puts it in the power of the operator to give a rich mixture at comparatively low engine speeds and a weaker mixture at high speeds. With intelligent use, the gasolene consumption can be minimized. It also had an additional advantage in that when the motor is being allowed to stop a rich mixture can be left in the cylinders, so that the self-starting properties of the motor are greatly improved.

All the engineers appear to realize the tremendous importance of the carburetter as related to the performance of their cars, and the questions of size of the air inlets, the amount of vacuum produced about the gasolene jet, so that the suction will be correct at all times, is plainly receiving its meed of attention.

All realize the necessity of getting more air into the mixture at high speeds than at low speeds, and do it by various mechanisms. Some allow increased suction at the time the engine is at high speed to draw from an extra inlet against spring tension. Some accomplish the same object by a rubber diapraghm. Another class gives additional air by connecting an auxiliary air inlet with the throttle lever.

The makers do not hesitate to exhibit and explain their carburetters, because they realize perfectly that mere inspection of this important part will not reveal the secret of its success. It would be a clever man, indeed, that by mere observation could appreciate

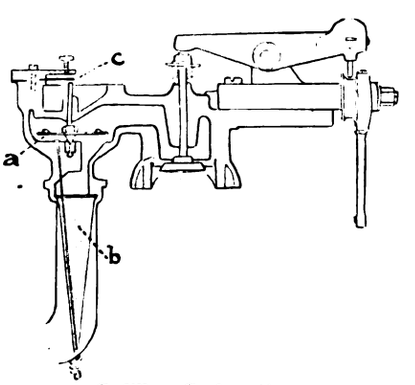


Columbia Carburetter.

the essential points underlying the secret of success in any given carburetter. It must be tried, used on an engine under all conditions and carefully studied.

The carburetter presents the great problem of the day to the automobile engineer.

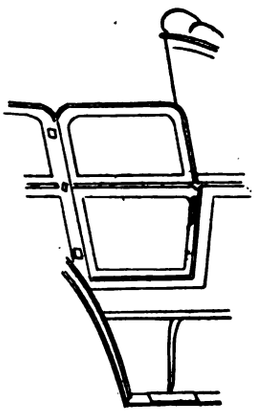
This Columbia carburetter is cut away so that the operation of it may be very easily studied. It takes its hot air in starting from the exhaust pipes through the tube, D, but the moment the governor comes into operation it opens an additional air supply, E, which is not hot. The amount of the mixture entering the engine is under the full control of the operator on the wheel, and the throttle valve, F, and air valve, E, bear a fixed relation to each other, and are adjustable, so that the best mixture may be arrived at.

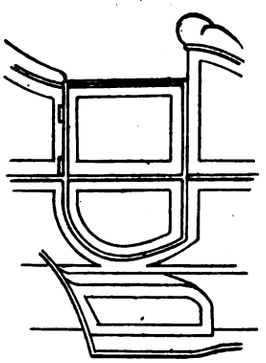


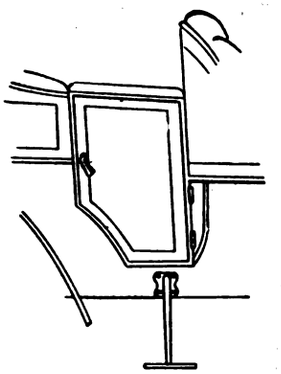
Cadillac Carburetter.

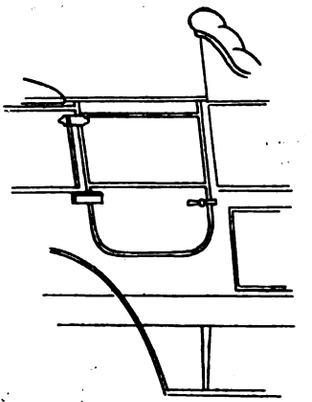
Probably the simplest carburetter in evidence is that shown on the single cylinder Cadillac. It consists merely of a very light copper disc, A, which is lifted by the suction of the engine, allowing gasolene to drop. If the engine is running slowly, it drops onto a wire gauze cone, B, and is picked up slowly by the inrush of air. If the car is running fast, there is more suction, the copper

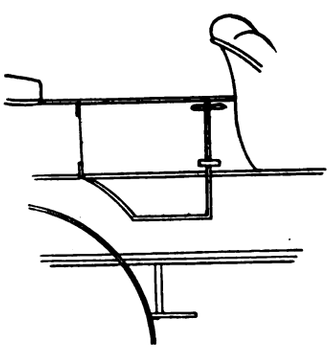
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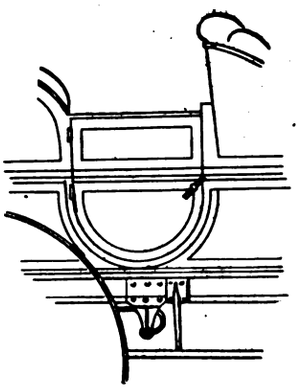

RAMBLER

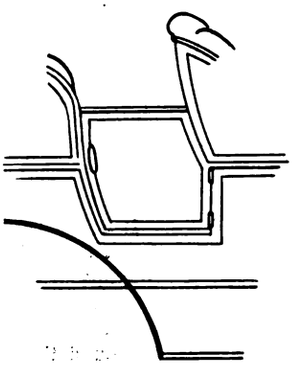

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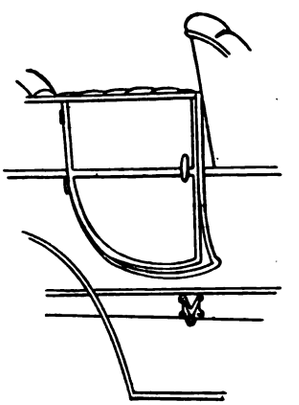

FORD

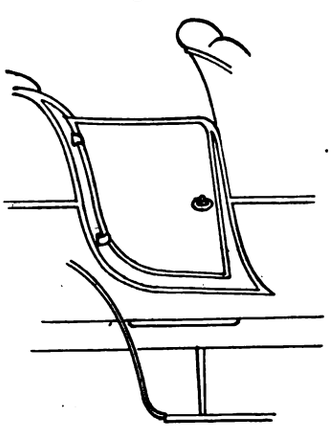

PREMIER

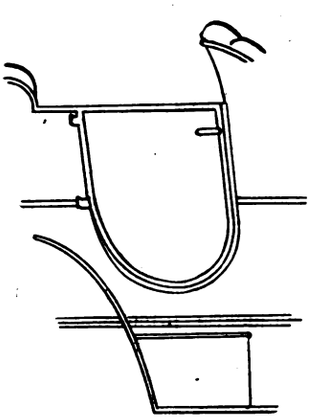

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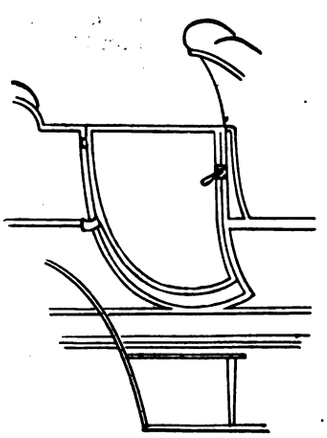

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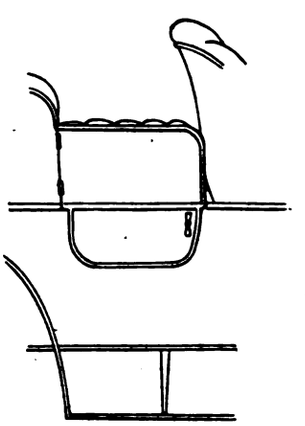

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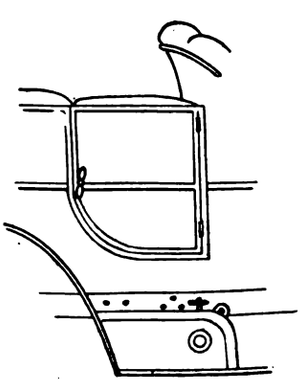

CADILLAC

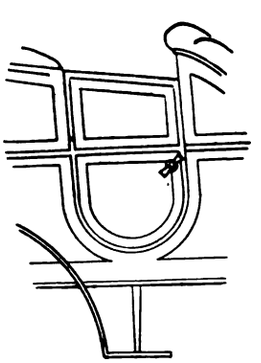

GREAT ARROW

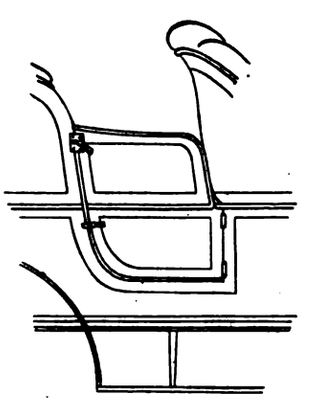

ROYAL

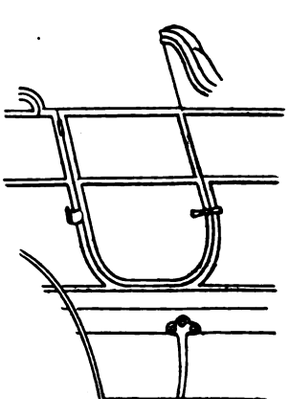

PEERLESS


MICHIGAN


LOCOMOBILE


OLDS


KNOX


AUTOCAR

TYPES OF SIDE ENTRANCES.

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disc is lifted up higher, admits more gasolene, and the air picks it up as it drops. Under extreme conditions of speed, the disc, B, or, rather the stem on it, comes up and in contact with the spring C, the tension of which can be varied. On the four cylinder model the same carburetter is employed, but with the auiliary inlet shown by the accompanying illustration. The well known power of the Cadillac car with this carburetter is a sure proof that, even as simple as it is, it is effective.

The Haynes carburettter is rather different from the others in the fact that the gasolene flows from the float chamber, and, instead of rising through a jet and coming in contact with the air, as most of them do, it passes downward, over a cone, the air meeting it, mixing with it in the mixing chamber and passing into the engine. It is also notable because of its regulation. With an increased amount of air admitted by the air valve, which is controlled by the hand on the wheel, comes an increase in the amount of gasolene—that is, the size of the jet is increased simultaneously with the admission of a greater amount of air. The proportions of increase have been very carefully worked out through a term of years, and with great success.

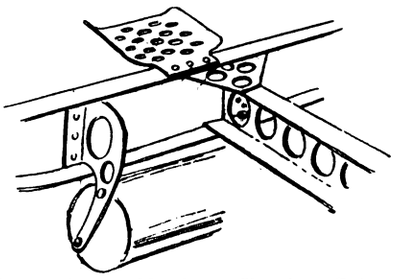
The construction of all steel frame predominates throughout the exhibition. It has been worked down to a fine science, and beautiful proportions are in evidence as far as is possible with an all steel frame of the type now in vogue. Some, notably the Packard, have gone so far as to lighten their cross members and gusset plates by cutting holes in them. This is a step in the right direction, as useless metal is removed.

A great many of the frames are drawn in opposite the engine, so that there need be no sub-frame, short cast members supporting the engine base and engaging directly with the side member of the frame. At this same portion of the frame several prominent makers have adhered to the sheet steel pan, which supports the engine and attaches it to the frame. This is successful construction when enough intelligence has been put into the study of the proper weight of metal to do the work and, also, to make the engine itself self-sustaining so that it depends upon the supporting structure for none of its strength.

As usual, striking innovations appear in the Cadillac, the construction of which is something original and departs almost entirely from old methods. This is seen in the polished chassis, in the tubular sub-frame supported at the front end by an elliptical truss, which is unquestionably very stiff and strong. From this truss, toward the rear, run very large seamless tubes, which carry the engine and transmission. Their whole frame is of generous proportions and shows intelligent thought.

One or two fairly good examples of the composite frame are in evidence, the best one being that of the Autocar. This is going along the right lines, the pressed steel side members taking the form of a channel to which all cross members of the frame of light sheet steel are attached. The side bars are nicely reinforced on the outside by rectangular wooden side members. The construction is neat and, without doubt, very strong, stiff and resilient. With this frame there certainly need be no fear of permanent bending; the side members of wood would insure against that.

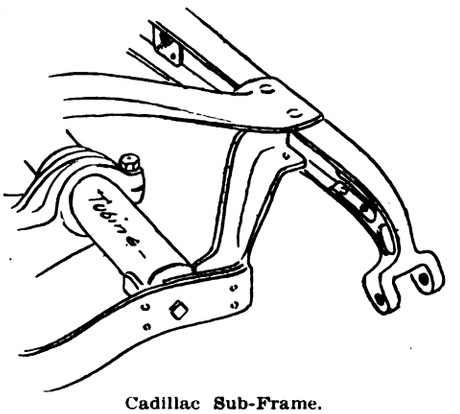
There is one instance of composite structure for part of the length of the side members, where the wood extends throughout the part of the frame upon which come the greatest strains. This is another step in the right



Packard Frame Members Showing Cutaway.

direction, and if intelligently used may prove to be the best solution of the problem. It is apparent that much care has been used in having close contact between the wood and the steel at all points. This is essential to get the best results from composite structure.

The truss frame has disappeared from one prominent make of car. Inquiry reveals the fact that it proved to be too stiff, and, consequently, caused failure in some other parts of the frame where the strains centred. This might not have been easy to foresee, but it is very interesting. It is not at all certain that a truss cannot be applied, however, that will properly distribute the load and strains, but without any danger to any other part of the structure and without being too stiff. This points again to the fact that wood is the natural stiffener for frames.



Cadillac Sub-Frame.

The inverted "U" frame is seen in its highest development in the Pope-Toledo. It is tied together at frequent intervals, making practically what is a box girder, except that the lower side is open. This type is fine from a structural engineering standpoint, but has some disadvantages in the attachment of the cross members and parts.

The angle iron frame is still in evidence, almost exclusively on the small cars. Of course, the frame in these cars is of minor importance, because it is comparatively short; many are composite.

One car has practically no frame at all, the front and rear axle being connected by a cylindrical structure containing all the transmission, and propeller shaft. The body rests upon springs fore and aft. The main side timbers of the body are strong and do all the work ordinarily done by the frame.

The materials composing the all-steel frame are still of a most ordinary grade. No attempt has been made yet to furnish high-class sheet steel for this purpose. It must be made, and undoubtedly will be made during the coming season. Nickel steel frames, heat treated, will give something double the stiffness of the present material, and yet be tough enough at that. Judging from the hardness of some of the French racing car frames, it is apparent that they have done something along these lines, just what has not been investigated. The time has arrived for our manufacturers to take up some of these finer details, which will go to make up a perfect car—light and strong.

TORSION STRUTS.

Few ordinary observers at the show realize the problem presented to the engineer in taking care of the violent twisting strain that comes upon the car in connection with bevel gear drive. When the power is applied the rear axle tries to rotate. Something must be interposed to prevent it.

A large variety of these devices are in use, and in one or two cars, in the Autocar and the Northern, for example, they are transmitted through the springs, which are made heavy and of special design for the purpose. Struts, where they exist, take many different forms. One that seems to be increasing in favor is a tube inclosing the propeller shaft. It serves as a casing for the shaft and its moving parts, and also as a torsion rod. These rods usually engage somewhere in the neighborhood of the transmission box, attached to the frame in that locality, or even to the box itself, and cushioned by springs or buffers.

One exception to this form is that shown by the Haynes people, where the torsion rod passes vertically to a part of the frame and telescoping in it. This makes a very short, very rigid rod.

BEARINGS.

The so-called "anti-friction" bearing is creeping to the front slowly and surely. There was a time when it was sidetracked in favor of plain journals. Now it is found in the shape of plain rollers, tapered rollers and balls, and with bearings consisting of a combination of balls and rollers.

Increased knowledge has brought with it increase of diameter in both balls and rollers, and the success of anti-friction bearings is assured just as long as reasonable diameters for the loads to be carried are adopted.

On the Cadillac there is a fine example of large balls for wheel bearings, on the rear axle 1⅛-inch balls being used. The hub looks large, but at the same time inspires the mechanical observer with confidence because of

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its size. Ball bearings are found throughout the transmission gears and bevel gear drive of several first class cars.

BRAKES.

Every variety of brake is to be found in the show. The exceedingly safe and proper scheme of having all the brakes directly on the rear wheels is creeping into general use. The Pierce-Arrow on its large car has two sets of brakes, one internal and one external, all bearing on the same drum on its rear wheels, that deserve study. They are strong, well built and of very generous dimensions, the drum being fourteen inches in diameter. A glance at these brakes inspires absolute confidence in their good proportions and safety.

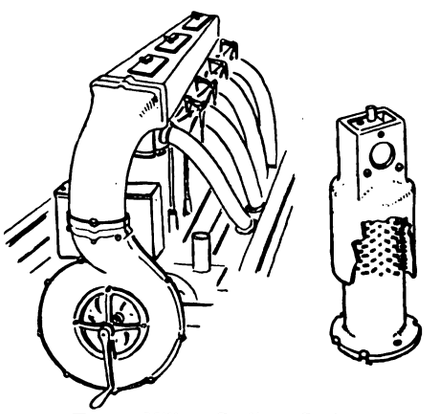
Wire rope is used rather more than formerly in transmitting motion from the body of the car to the brakes. This is a thing that is found in a great many foreign cars. It is cheap construction, but there is always the chance that the wire rope will wear without being observed and fail at the time most needed. This is an accident that is out of the question with properly constructed brake rods.

On the long Pierce the observer will notice an extremely large intake pipe to the carburetter. It is 2¼-inch outside diameter, 16 gauge and leads around the rear end of the engine so as to take warm air from the exhaust pipe. This makes the pipe somewhere about twenty-five or thirty inches long. A large intake is well recognized and desirable, so that the air may go to the engine freely without friction and without wire drawing. The long pipe also plays another beneficial function. The air within it has considerable inertia and helps fill the cylinder quickly. This would not be so with a small pipe, where the friction would overcome and offset the inertia, but with the dimensions given it must have a marked effect. This is one fine point of engine building, and a good one.

AIR-COOLED MOTORS AND CARS.

Judging from the exhibitions at the show, the successful performances of the air-cooled motors of the past, and the tremendous amount of intelligent thought that is being put into the problem, the air-cooled motors have come to stay in some form or other, even in large powers.

One apparently very promising type, and a new one this season, as far as the public is concerned, is the Frayer-Miller. At the forward end of its crank shaft, in front of its engine, is a good, substantial fan of the Sturtevant blower type, some twelve or fifteen inches in diameter, possibly more. Leading from this directly up in front of and along the top of the four cylinders is a generously proportioned and well finished air blast pipe. Each cylinder has an aluminum jacket, very much like a water cooled cylinder jacket, only that it is open at the bottom to allow free exit of air. Under these jackets are a comparatively few spines, which assist in distributing the air rather more than in forming a function of giving additional cooling surface. A powerful blast is transmitted by the fan down around each cylinder, it being distributed very carefully by careful proportioning of air passages. There is little doubt but what this means of air-cooling actually keeps the cylinders cool. It is quite possible that so much air might be forced through as to overcool the engine. The only questionable point in the proposition is as

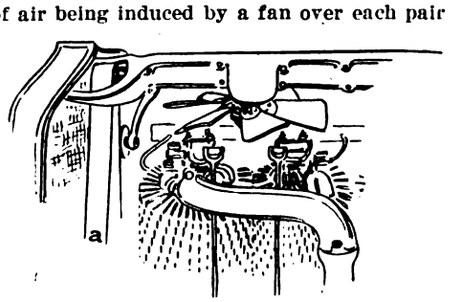


Frayer-Miller Cooling System.

to the amount of power necessary to drive this fan and force so much air through constricted passages. The machine as seen running on the street is smooth and noiseless.

The air-cooled motor developed by the Orient people for their motor-cycles and buckboard has been evolved into a very neat four-cylinder engine for a moderate sized touring car. It is simple, compact and evidently well thought out. The claim is made that the cooling is perfect.

In the Corbin car, which really makes its debut at this show, a new and simple type of air cooling spines is used, the rapid current of air being induced by a fan over each pair



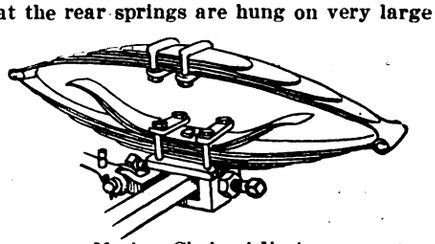
Corbin Cooling Spines.

of cylinders blowing downward. The car, as a whole, is well considered and shipshape in all respects.

The good old stand-by, the Knox car, returns again with comparatively little change in the motive parts. Little refinements have been added to quiet the car, to cool it a little more thoroughly by using the fly wheel for a fan and taking the hot air away from the centre portion of the motor. The wheel steer is also used. Their lubrication has been somewhat improved by force feed pumps, but, as before stated, the refinements are along the lines of perfecting, rather than changing. This motor lends itself beautifully to their commercial trucks. It is undoubtedly extremely successful in the hands of the class of men who operate such cars.

An interesting air-cooled car is the Marion, seen in the basement. The motor is a four cylinder, with the four cylinders set across the top in front of the hood. The most startling part of the air-cooled motor is the tremendous size of the exhaust valves and their location, directly at the end of the cylinder. This allows the exhaust of gases to pass quickly and relieves the cylinders in the quickest possible time of the old gases. The clutch and transmission mechanism are interesting by the very generous dimensions and rather peculiar arrangement. The arrangement also has a lot of good points in it.

The means of changing the chain adjustment are, perhaps, the most radical points on the car. To adjust the front chain leading from the sprocket shaft to the engine shaft, the whole countershaft may be removed rearward. This naturally slackens the rear chains under ordinary construction. Provision is made for this in the fact that the rear springs are hung on very large



Marion Chain Adjuster.

pivots, and the whole rear axle swings backward by lengthening the strut rods. In addition to this, and to take up the rear chain elongation, the rear axle rests in a slot on the under side of the spring and may be pushed rearward by set screws two inches more or less. This latter point is exactly similar to the adjustment of the rear chain of the bicycle.

In the Maxwell-Briscoe car is found the type of motor that is fast growing into favor for medium weights; that is, the two cylinder opposed, under the hood. These people have a very nice arrangement, something well worth careful observation. Their fly-wheel is in front, another instance of previously questioned construction which has been adopted by some very good engineers this year. It will be very interesting to see how this works out. There is nothing wood about the whole car or its body except the footboard and the wooden strip holding the apron on the front seat. All the rest of the car is of metal.

LUBRICATION.

The lubrication of the vital parts of the cars seem to be tending all in one direction, and that is the force feed pump, operated by the engine and driving oil by piston pump and positive pressure to the parts lubricated. Of course, the small cars still have the gravity feed, assisted by pressure from crank case or muffler.

The 18 horsepower Columbia, Mark XLIV, shows a very ingenious and effective lubri-

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cation from a box directly over the engine and with feed pressure in the crank case. This is their second year of this type, which is pretty good proof that it has been a success.

The most notable system of lubrication for the engine is shown in the Pierce-Arrow. It results in wonderfully small consumption of oil for the engine, and at the same time gives most efficient service. A geared oil pump operated by the cam shaft drives oil from a pit at the bottom of the crank case and forces it into a reservoir at the top of the engine. From this reservoir pipes lead to the crank shaft bearings and the crank pin bearings. By proper channels the oil finds its way through the centre of the pins and is thrown by centrifugal force outward on to the cam shaft and upward, so that the piston is lubricated only by oil from the crank pins.

A continuous flow of oil from the reservoir down through these vital parts into the small pocket at the bottom of the crank case is assured. The flow can be copious and more than enough, because no oil is wasted, it being pumped right back again up into the tank, where it is cleansed by a little cotton waste filter and returned as good as new. The Pierce people have used this now for several seasons, and have no idea of departing from it, so successful has it been.

Grease is used by most builders at some part or another of the car where the bearing must be left to take care of itself for some little time. Of course, the transmission gears and bevel gears run in oil, and are thus most efficiently lubricated. The wear of transmission gears is not a serious menace to the life of the machine. Those in use several years give no serious indication of wear when lubricated in this manner by proper grades of oil.

The greatest problem of lubrication is in the crank pins and main engine bearings.

A good deal of difference exists as to the thickness of oil that ought to be used in an engine, but it resolves itself to about this—that the single or double cylinder engines with big bore and stroke are best handled by heavy oils, and that other engines of high speed are best taken care of by a light or medium oil.

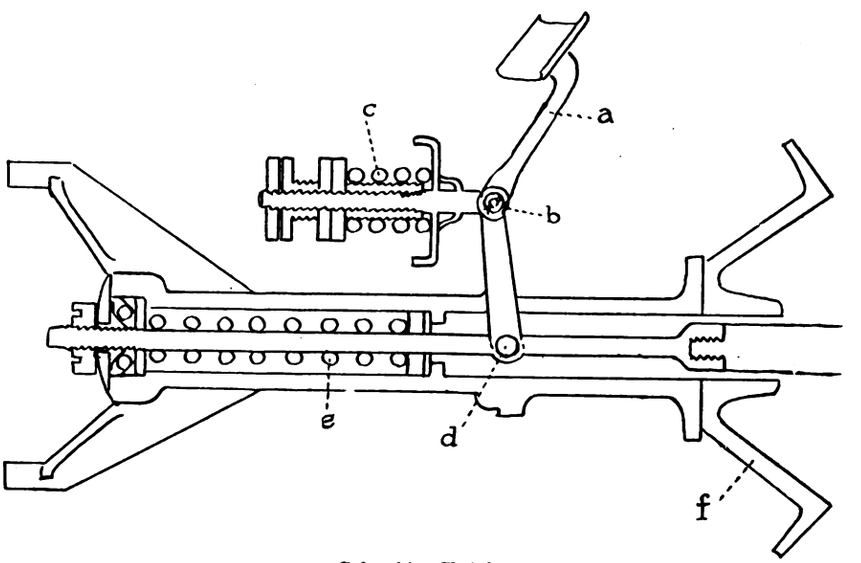
In the air cooled engine the question of cylinder lubrication is of much importance, and is met by them by proper grades of oil flashing at high temperatures.

A constant level splash lubrication is maintained in the Haynes four cylinder car by means of a tank which feeds by gravity and a float which opens and admits oil when the level falls below a given point and closes when it reaches a correct level. In addition to this, oil is fed to the four pistons by the regular oil pump. It is worthy of notice that the Packard engine is oiled entirely at one point. A pump feed enters the crank case at the top, near the centre, and all parts of the engine mechanism, such as crank pins, bearings and pistons, are oiled from this one supply.

As far as the lubrication of bearings is concerned, the question sinks into insignificance in connection with roller and ball bearings. Just enough oil should be applied to keep them from rusting.

CLUTCHES.

A feature in clutches that will be overlooked is the compensating springs of the clutch of the big Columbia car. The peculiarities of it are this: The ordinary spiral spring E, holding the cone clutch, F, in which plays the foot pedal, B, are supplemented by an auxiliary and compensating spring, C. There is a slight difference in the strength of these two springs, and one operates against the other in such a way that at the instant the clutch comes in contact with its seat the operator is dealing only with the difference in tension between the two springs, instead of the whole tension of one of them. This means that he can move his foot almost two inches without allowing the clutch to seat suddenly, whereas with the ordinary single spring the clutch is liable to seat suddenly the minute it comes in contact with the flywheel. This is brought about by putting the fulcrum, B, on the foot pedal, A, against the compensating spring, C. The device is exceedingly simple, but the advantage of it is not easy to see nor easy to explain.



Columbia Clutch.

In the Stevens-Duryea, four cylinder, is found a clutch which stands alone in the show. It is a series of leather-faced discs bearing on steel, brought in play by a spring ratchet drive in a compartment by itself. It is built up along right lines; it must be examined and it must be recognized by the engineer as a coming proposition. The principle is not new by any means, and it has been accepted in many places in the mechanical world as good for a clutch which will take hold gently but positively.

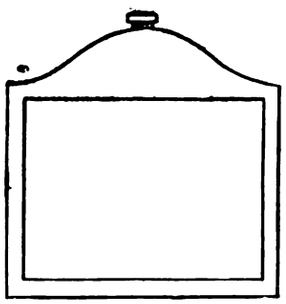
SOME GENERALITIES.

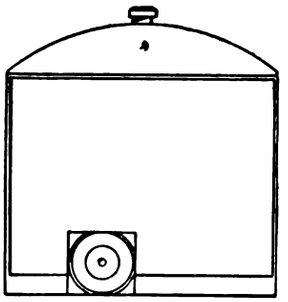
The only two cycle motor in the exhibition is shown in the Elmore, both single and double cylinder type, horizontal under the body. In the two cylinder car both the cylinders are on one side of the crank shaft. The Elmore people have faithfully clung to the two cycle type, and have done well with it without doubt. As to its actual efficiency as compared with the four cycle, there is really no good information. If the old charge is thoroughly swept out by the incoming new charge, then it ought to be equally efficient. The Elmore Mfg. Co. have experimented very greatly with a flange on the top of their piston, which is for the purpose of deflecting the incoming charge in such a maner that it will drive every bit of the old exhausted charge out of the exhaust port without mixing the two. It certainly is interesting to remark that with the two cylinder, two cycle the explosions are just the same per revolution as with the four cylinder, four cycle engine.

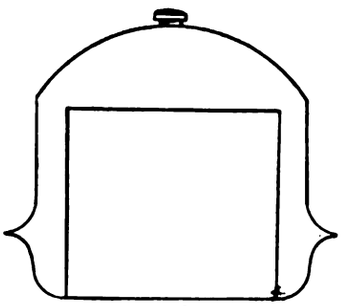
The Rambler car shows the same type of motor as last year, two cylinder opposed, under the body, with the cylinder diameters of 5x6. There has been substituted a pressed steel frame for the one of angle iron previously used, and a very strong and stiff one it is, too. In the Rambler the ignition is advanced and retarded by the governor, so that the operator does not have that to think of at all. This is an exceedingly good scheme, and is likely to be adopted to a considerable extent in the near future. It meets nearly every condition of all those possible to arise. As the engine speeds up the spark advances, due to the action of the governor, and this is exactly what should be done by the hand to operate the spark intelligently.

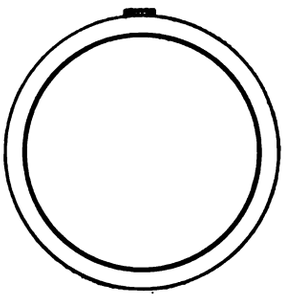
Probably the most startling thing about the Rambler motor is the fact that it operates perfectly without a circulating pump, on the principle of the thermo-siphon. Notwithstanding the fact that it is something over six feet from the extreme end of the motor to the radiator, and that the pipes are necessarily level, or nearly so, for the greater part of that six feet, the water circulates perfectly. Careful inspection reveals the secret. It is that the pipes are very large in diameter and very smooth, and without unnecessary or sharp bends. The tubing is all brass, 1¼-inch diameter. The Rambler radiator is of

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the accepted steam engine condenser type, a most reliable and well established form. The spaces between the tubes are not as much constricted as in some of the cellular radiators, and it is probable that this type would be necessary with any thermo-siphon. The water must have free passage to operate successfully on this system.

The Rambler also uses a wiper ring on the end of their piston near the cranks, to insure against too much oil finding its way up into the motor from the splash in the crank chamber. This is a precaution that ought to yield good results in any horizontal engine. There have been some decided changes made in the material entering into their planetary transmission, bronze wheels being substituted for fibre and steel. It is absolutely dust tight, and retains all the oil that is put into it. This, of course, adds greatly to the smooth running and wearing qualities. The reverse and slow speed bands of the transmission are steel straps lined with fibre, in place of the leather formerly used. It is believed that the fibre gives better service.

The bearings of the machine are one-half-inch balls of the two point type, running on curved cones and cases, which insures long life and easy adjustment.

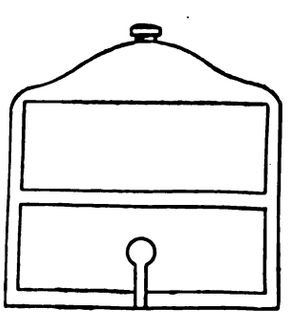
One of the most remarkable small cars is the Buffum, weighing 930 pounds, for two people, at a cost of $1,200. This departs very decidedly from the regular outward appearance for this type of car. There are four cylinders, 4 x 4, located under the hood in front. Everything about the car is compact, light and strong. It should be one of the most powerful runabouts in the trade; by all means examine it carefully.

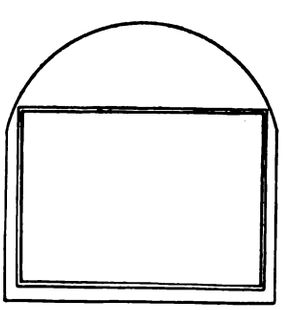
There is one newcomer which must command the attention of the public, the Buick, already famous for the claims of wonderful development of horsepower from a relatively small engine.

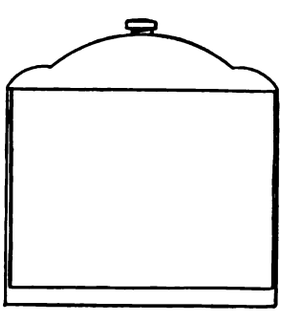
Mr. Buick realizes that his claims are apt to be questioned, and very generally and in a very nice way explains why he certainly is getting more horsepower than engines of similar size. Twenty-two guaranteed horse power from two 4½ x 5 cylinders is equal to, if not in excess of, the best performances by a motor of any kind. There are these points which are good and unquestionably good about the Buick motor, all of them tending to give good results in burning the gasolene: In the first place his valves, 1⅞ inches in diameter, are at the end of the cylinder; the diameter given is generous. The gas as it enters, enters the piston clearance at the end of the piston immediately. His spark plug is on the side of the cylinder about midway between the pistons, at the top of the stroke and under the cylinder head. This puts his ignition point directly in the cylinder proper. Compare this with the fashionable type of valve chambers, sometimes two or three inches from the cylinder pipe, and it is easily seen that quick burning of the gases is arrived at, with the pressure exerted quickly and immediately upon the pistons, and that all these points tend to give better efficiency. The fashionable type is good for a lot of things, but it is perfectly sure that the quicker you burn the gas the quicker you fill your cylinders, the better the horsepower developed.

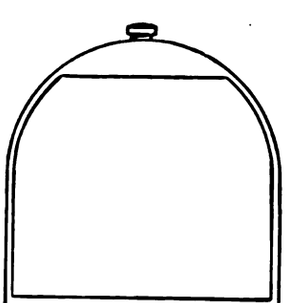
The well known Peerless comes back again this year with all its fine features and refinements. It brings with it, though, a motor that is new in design and, in one respect—in the Peerless—in principle. The new design is the fact that both inlet and exhaust valves are directly at the top of the cylinder, with the spark plug on the side of the cylinder about midway in the clearance. The thing new in particular is, however, that there is an arrangement which practically gives a double exhaust. It may be explained in this way: Assume the charge just exploded, the piston travels downward in this cylinder. At a point one-quarter inch about from the end of its stroke it opens a port one-quarter inch wide and about two inches long directly into the exhaust pipe. This relieves the high pressure exhaust. Then the piston starts back, pushing out the old exploded charge through the exhaust valve in the regulation manner. The claim for this is that the engine heats less and runs quieter. The device is a new one for the Peerless company, and most naturally excites a very great deal of attention and comment. The Peerless put on the magneto also this year, with the jump spark, doing away with the batteries. They have also changed the angle of their clutch, giving rather a milder engagement with just as strong final holding power.

The most notable feature in the Ford exhibit is their splendid, simple and compact four cylinder chassis. This is their new model. The engine is exceedingly simple, the pump being run directly from the end of the cam shaft at one end of it, and the commutator directly from the cam shaft at the opposite end. The fan has a pulley on the front end of the crank shaft. There is, therefore, no gear visible or used about the engine, except the one gear which runs the cam shaft. The simple planetary transmission is used with two speeds ahead and a reverse. It is small and compact. The power is transmitted from the transmission to the rear axle by one universal joint only. This


MAXWELL

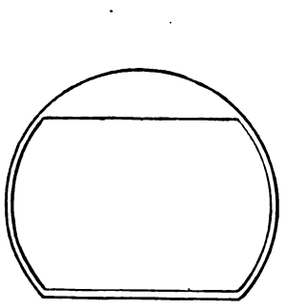

RELIANCE

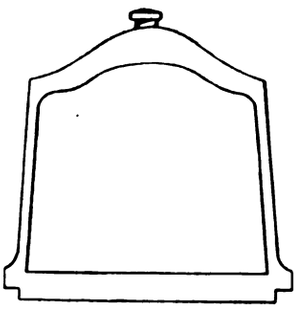

THOMAS

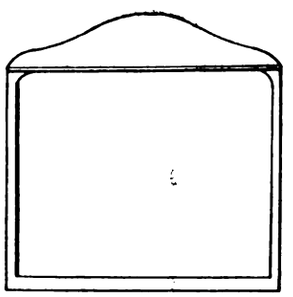

ROYAL

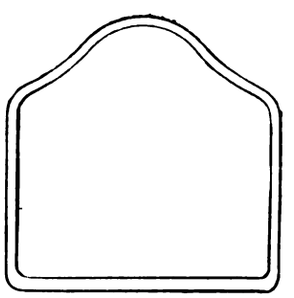
HOW THEY LOOK COMING "HEAD ON."

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GROUT


PACKARD


WHITE


ORIENT

is so arranged by a large ball socket that no strain on the rear axle reaches the forward part of the car at all. The impression given by the chassis is of extreme simplicity and lightness. Altogether it is a fine piece of work. Their old Ford is practically the same as before, except that the 12 horsepower engine is rather more powerful.

The Buffum exhibit should not be overlooked, for two reasons: First, because there is a $4,000 car, the finish of which is perfect, the mechanical points along the best-accepted lines and carried out in every detail to the utmost nicety. The motor carries two systems of sparking, the jump and the make and break. Either may be used separately or both together. This machine is mounted upon ball bearings and rolls on the floor at the slightest touch. The ball bearings are coming, there is no question about that, where the price of the car will allow it. H. S.

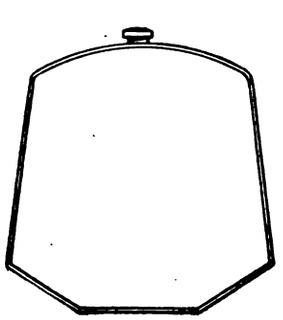
IGNITION.

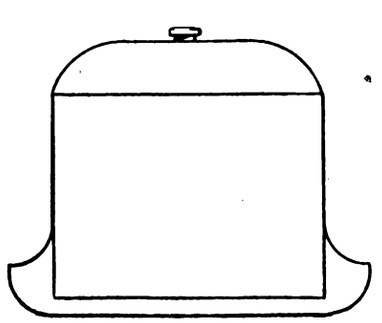
First impressions of tabulated statistics showing the methods of ignition obtaining with all the makers represented at this year's show would lead one to the conclusion that the latter have left this very important problem entirely to the manufacturers of ignition apparatus during the last year. Out of some seventy-odd cars of different makes to be seen in the Garden, no less than thirty-eight, or more than 50 per cent, have retained the dry battery, some in connection with accumulators, others with a generator, and still others with a magneto, but all these exceptions taken together will be found to constitute a pitiful minority of the thirty-eight, the majority of whom stick to the dry cell and coil in its original form of application.

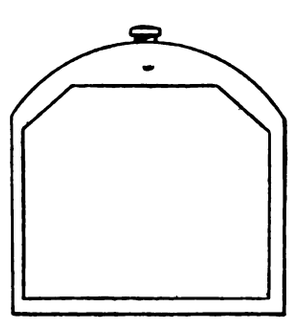
The next largest group comprises those employing accumulators in various combinations and figures a total of twenty makers, or somewhat less than a third of the whole number. Of these the majority have simply substituted the storage battery for the dry cell; others have used the accumulator for ordinary running with a set of dry cells as a reserve, as in the case of the Pope-Toledo cars, while some, as in the Packard and Pierce cars, provide a reserve set of accumulators, and the Pierce car is, in addition, provided with an extra coil, readily substituted for one failing to operate, owing to the adoption of the unit system of dashboard coils used in this make. Unit or sectional vibrator coils may be said to be practically universal this year, but this probably is the only car to be seen at the show that has made such provision against accident. A very small subdivision of the accumulator class uses the latter in connection with a small direct current generator of the "Apple" type, in shunt with the storage cells, and this should prove an ideal outfit, as even in case of accident to the source of current supply the accumulator should be more than sufficient to get home with. Two cars, the National and the Studebaker gasolene, have this sub-head entirely to themselves.

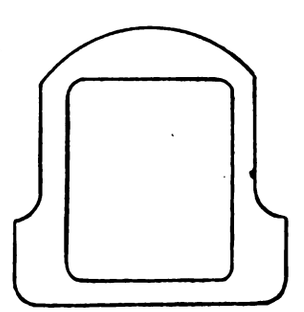
The drop to the next class, or those employing high tension magnetos, is a long one, as it is represented by but eleven cars in all, three of which are foreign. The domestic makers included under this head are the Stearns, Walter, Winton, S. & M., Acme, Lozier, Upton and Peerless, and in the case of the last it is left to the purchaser of the car; he may have whatever his preference dictates, either batteries and coils or the magneto, and by selecting the form with which he is most familiar have the advantage of knowledge gained by experience, or at least have no one else to cuss but himself when it goes wrong. Several other makers, among them the Wolverine, Buffum, Duryea and S. & M., accord the buyer the privilege of choosing his own medicine, and are willing to apply what he may fancy, whether the latter be high or low tension magneto, direct current generator or batteries, dry or storage, though some of those mentioned specify exactly which of these forms they will supply, while others include all. The three foreign cars in the above cited class are the Panhard and Renault, using the Eisemann system, and the Leon Bollée (Worthington). On the latter car are provided two entirely independent systems of ignition, separate even to the extent of operating through different spark plugs. These are in the form of a high tension magneto and distributor and a set of accumulators, with the usual four part dashboard vibrator coil, so that both are at least similar in supplying a jump spark. Either may be called upon at any time or both used simultaneously, though their object is naturally to provide an infallible reserve—infallible, at least, to the extent that no part of either system is at all dependent on the other, and that one may be totally destroyed, if that were possible, without affecting the reserve set.

Several makers have thought it worth while to provide two entirely independent sets of ignition apparatus, as outlined, protecting to as great an extent as possible the relay apparatus from being rendered inefficient through accident to its working mate, by isolation, though only two others have gone to the same extent, the Phelps and Buffum, in which both make and break and jump spark ignition are provided. The others, such as the Walter, only stop short of this point and provide everything in duplicate except the


LOZIER


WINTON


APPERSON


FORD

HOW THEY LOOK COMING "HEAD ON."

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"SHOW-FURS."

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firing device in the cylinder itself. The interchangeable combination of make and break and jump spark on the same car, as represented by the Phelps and Buffum systems, is probably one of the most radical departures to be found in this year's attempt at the solution of the ignition problem. Both of these cars employ a low tension magneto simply to supply the make and break spark, which in the former is not the familiar wipe or hammer and anvil movement, but a needle contact, spring controlled and moved upward by the cam shaft in its revolutions and merely touching against a similar point inside the cylinder. The needle remains at rest except when making contact, and is retained in place by a spiral spring. The systems of ignition are readily interchangeable, and one may be substituted for the other without delay or the necessity of making any complicated adjustments. On the Buffum the purchaser is allowed either storage or dry cells for the jump spark side.

A further classification of the cars from the ignition point of view places those relying solely on the low tension magneto in another subdivision, comprising nine makers in all, of which one is foreign, the De Dietrich, and two are adaptations of a foreign system, the American Mercedes and the Locomobile. Where the latter car is concerned, this marks a jump from heights of complication to the lowliness of simplicity, as their product of only two years back was marked, and, in the opinion of some, marred, by the employment of an unusually large direct current generator, two sets of accumulators, provided with an automatic charging and cut-out switch, and sufficient wiring on first sight to fit out a small sized charging station. Now the jump spark has been discarded utterly—a low tension magneto provides the current for the make and break system provided with individual switches on each cylinder for ready inspection. Of the other makers in this class, both the Standard and Matheson cars are now in the make and break line, employing Remy low tension magnetos.

This partial return to a system that was abandoned by one and all at the inception of the building of four cylinder high powered cars in this country, as something totally unsuited to the use of the motors in question, though it was at the time in successful use on the other side, is a development that will doubtless be closely watched by makers in general here, and in all probability will lead to its extension to other cars before the end of the year. It is indicative of the general feeling of dissatisfaction on the ignition question, and is more in the nature of a retrying out of a system that was cast aside previously without being accorded a very thorough test.

Coming to the next class, there are three lonesome representatives who are pinning their faith to the small direct current generator, the Duryea, using it with dry cells, although the customer is allowed an option on other forms of ignition, and two, the Studebaker gasolene and the National, using it in connection with a set of accumulators placed in shunt with it and always charging, and, on the whole, forming a simple and economical source of current supply and reserve at the same time. Of those which may be listed to a certain extent in a classification of their own are the De Dietrich, using the Simms-Bosch low tension magneto, and the Speedway, with a high tension magneto and a set of dry cells as a relay. The Eisemann high tension system is present upon but two cars, the Panhard and Renault, the former concern having fostered it originally and giving it the official seal of approval some time back. The Remy magnetos are in evidence to a much greater extent, though but in a few instances in the high tension type.

Coming from the source of current supply to the feature of distribution on the multi-cylindered engines, it is noticeable that there has been very little effort to centre this on the dashboard, as previously, and probably not more than one or two cars in all, such as the Napier and the Autocar, show this. On the other hand, the distributor has been moved about in many instances, and is no longer to be universally found lying horizontally and pointing forward or aft at the front or rear of the engine, as was formerly the case, but has in several, of which the Ford, Packard, Autocar, National, Haynes-Apperson, Covert, Royal and Pungs-Finch are examples, been placed on a vertical shaft rising slightly above the level of the engine, and is driven by bevel gearing from the cam shaft, as usual. In the case of the Autocar, this shaft comes inside of the dashboard, rendering the working visible. On the Napier what appears to be an ordinary four part dashboard coil box, except that it is provided with plate glass lights, houses the single coil commutator and distributor in a central and instantly accessible location.

The Eisenhuth Compound—the only car of its kind at the show—provides a duplicate arrangement of jump spark plugs, one in the inlet passage and one in the centre of the head of each active cylinder. These plugs spark simultaneously, and should not only be the means of providing more complete and rapid combustion, but, as they are wired in multiple from the distributor, double the chances of firing the charge.

While frequently not in evidence when most wanted, the vital spark is sometimes present when and where it is not at all desirable—at starting. This is the result of absent mindedness on the part of the operator, and failure to return the lever to the starting point often results in a vicious back kick on cranking the engine. This is provided against on the Acme car, using the Remy high tension magneto by connecting the spark advance with the starting crank. Should the former be left at advance on leaving the car, grasping the starting crank causes it to fly back to the beginning of the quadrant before the engine can be turned over.

"New Dur Exploder" is the name of a magnetic plug being placed on the market by the Duryea Power Co. This consists of a solenoid equipped with both a plunger and an armature, though the former does not act magnetically. Normally it rests by gravity on the contact located on the under side of a bridge spanning the plug and completing the circuit. On the opposite end of the magnet which is inclosed in a metal casing is a hinged circular armature through which the plunger passes, and engaging the latter by means of a washer forced on it. Upon the current passing the armature is attracted, and with its release the plunger is jerked upward, rupturing the circuit and producing, not a spark, but a somewhat blinding flash. The principle involved is not new, by any means, but has seemingly never met with any favor at the hands of the manufacturers of cars, though several attempts have been made within the past few years looking to this end.

Folding Bicycles for Emergencies!

Most people hold that the automobile has had an adverse influence on the use of the bicycle. From Paris, however, comes the story of a portable bicycle that owes its "invention" to the vogue of the motor vehicle. In this case the cycle is a tail to the automobile kite, designed to be carried in the car so that in case the latter becomes en panne from any cause the bicycle can be utilized to carry the driver to his destination.

M. Prudor is the name of this distrustful motorist, and he has been granted a patent on his invention. According to the patent specification, the latter is "an emergency bicycle, to be carried by and used in connection with motor cars, so that if the car should break down or meet with an accident the chauffeur can leave it on the roadside and proceed to the nearest village where he can get assistance or telegraph or take any necessary steps. The bicycle is such that it can be collapsed or folded, and will then occupy by a very small space, under the seat or in the mud guard baskets. Four of these bicycles can be carried in the mud guard baskets of an ordinary car" (presumably to allow all the crew of the car to escape). "Notwithstanding its small dimensions, the bicycle has the power" (?) "of a bicycle of current pattern, and the cyclist rides it in the usual position."

Two illustrations are given, one showing the machine in its collapsed position and the other expanded ready for a bold man to ride. The frame consists of four tubes, crossed and joined about the centre, so that they are free to be collapsed. The extremities of these tubes are connected by wires. Those in the forward end of the bicycle are connected at one end of two projecting pins on the steering fork, and at the other to each side of the handle bar. Thus when the handle bar is moved, the wheel will move with it—perhaps. The inventor suggests that these steering cords add lateral rigidity to the machine.

According to the police records, there are 1,143 automobiles in use in Detroit, an increase of nearly 100 per cent during the year.

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ELECTRIC VEHICLES

Barring the advent of some revolutionary improvement in the shape of an accumulator, visitors to the show did not anticipate finding any great difference in the types of electric vehicles for either pleasure or commercial purposes, but both have come to be such a necessity in many ways for city use that these exhibits, though lacking in the drawing power of the high speed gasolene cars, have come in for their share of attention. Edison's new battery, which at the time of its initial exploitation was confidently predicted to be the immeasurable superior of any other form of accumulator in the market, has fallen so far short of this that, like the boy who cried wolf too soon and too often, it does not now receive the attention it merits. It has been adopted by several large users, and has considerable to recommend it, but as these features have long been a matter of common knowledge it is unnecessary to detail them here.

The Baker line of pleasure vehicles presents a full complement of this type for the intending purchaser, and as this firm has been the only one to adopt and successfully carry out in practice a system of low voltage, a smaller number of cells, with consequent gain in charging expense as well as weight, is a feature of their carriages. The depot carriage, with motor under a bonnet in the front of the car and bevel gear shaft drive, shows the marked effect on public taste of the prevalent form of motor carriage as exemplified by the gasolene vehicles. This type is very convenient for stormy weather use, and has become quite popular. No attempt has been made to increase the speed of any of these types, the maximum of which remains at fifteen miles an hour. In the Baker line of vehicles only twelve cells are used on the light runabout, and but twenty-four on their heavier types, their ¾ horsepower motor on the former, operating at 24 volts and 22 to 28 amperes, consuming only 500 to 600 watts. Any battery the customer prefers will be installed.

The Electric Vehicle Co.'s engineers have devoted their attention to further improvements in the already very effective Exide cells, and have reduced the bulk somewhat by omitting some of the corrugated wood and rubber separators which were found to be unnecessary. Improvements have also been made in the manner of connecting the plates in the various types of cells; in that intended for pleasure vehicles this takes the form of a new pillar post connection, to prevent the plates breaking away, and the top strap of which is simply forced on so as to be readily removable. On the heavy express wagon type these top straps are made unusually substantial, and are burned on; the L form of connection previously in use has been retained on the medium heavy cells. New records have been added to the laurels of the Exide cell during the last year, and they have been adopted by a number of large users for commercial work.

The Pope Waverly line of "always ready" electrics comprises a dozen or more different styles of pleasure vehicles, and this firm is making a strong bid for delivery wagon and heavy truck orders. Their "herringbone" gearing for transmitting the power to the axle is made of gun metal, and hardened steel in the case of the small pinion, and is conducive to absolutely quiet operation—an advantage to be dwelt upon.

The Studebaker Mfg. Co. is devoting most of its attention to the production of heavy business vehicles, which are being turned out in numbers, although pleasure vehicles are also included in its line. On the latter the equipment consists of a battery of twenty-eight Exide cells, with a special Westinghouse plain bearing motor and double reduction gear. Speaking of heavy commercial vehicles, the Rainier exhibit should prove a factor of educational value in demonstrating to what a phenomenal extent electricity is being harnessed to the heavy delivery wagon. Huge trucks for carting every imaginable kind of materials from drygoods or condensed milk to beer in kegs confront the visitor, and they are but samples of the extensive number supplied to large concerns all over the country, particularly for use under crowded traffic conditions.

The universal adoption of alternating current supply in new installations has made it increasingly difficult for the owner of an electric to obtain charging current without going to the expense of a rotary converter or motor-generator set, either of them calling for quite an investment and skilled supervision. To obviate this the General Electric Co. has recently placed on the market a mercury arc rectifier, an extremely simple device for charging storage batteries from an alternating current, and unique in the fact that it is without any moving parts. Compared with the common motor-generator set, it shows a higher efficiency and power factor, and has a lower first as well as a lower operating cost, while its simplicity makes its use possible for persons not familiar with electrical apparatus to charge their own vehicles. It consists, in brief, of a panel, tube and holder and a compensating reactance.

The panel is of the usual slate construction, and on it are mounted the tube and all necessary switches and terminals. The tube itself is an exhausted glass vessel of peculiar shape, containing two anodes and a cathode, provided with metal caps for the terminals which protect the electrodes, reducing to a minimum the liability of breakage and burning out. The leads from the anodes are connected to the compensating reactance, while the lead from the cathode forms the positive side of the direct current circuit. The holder consists of a moving member mounted on the face of the panel and provided with spring clips for holding the tube.

The compensating reactance is connected directly across the alternating current supply mains, and is mounted either on the back of the panel or may stand on the floor beneath it. Leads are brought out from the reactance to a dial switch mounted on the front of the panel, and by means of which the voltage and amount of current may be varied within the limits of the rectifier. A tap is brought out from the reactance, and forms the negative side of the direct current circuit. The complete outfit occupies very little floor space, and is made in capacities of 10, 20 and 30 amperes, and will be furnished for any commercial frequency.

STEAM CARS.

The White presents new models which are irresistibly attractive to the passer-by. Those who have ridden in the White and used it need not be told what a delightfully smooth running car it is. The Frenchmen who examined it at the World's Fair in St. Louis pronounced it to be undoubtedly the smoothest thing on wheels, although they did not exactly care for steam. White has added some very valuable functions to his motor. Perhaps the most important is the fact that he has got a change of gears, one of them being three to one and the other seven to one. This gives tremendous power on hills and allows the engine to run at high speed; consequently keeps the generator full of water, even on the most severe hills. It also allows the operating of the motor while standing still for purposes of pumping up the boiler without the use of a hand pump. A large fan back of his steam radiator brings about the condensation of a very much larger proportion of the steam, which, of course, allows the car to travel further on one tankful of water. There is a larger generator in the car, so that more horsepower may be developed. The air pump for the gasolene tank is thrown into operation by the mere closing of a valve. In short, it seemed as though the operating of the motor had been reduced to perfection.

The Grout steamer is one that has made immense advances this last year. Its generator is in front of the dash, the engine under the footboard and the gasolene under the seat. The chassis, which is exposed, shows a good, commonsense arrangement and proportioning of parts, and it would seem, from the description of its mechanism, that every emergency had been guarded against.

To Build the Mors in St. Louis.

It came out this week that the automobile which the St. Louis Car Co. will manufacture will be none other than the Mors. M. Mors is now in this country, and on Saturday last made definite announcement of the fact.

The St. Louis Car Co. is one of the largest producers of streetcars and railway coaches in the country, and with such facilities as they command should cut no small figure in the automobile industry of this country.

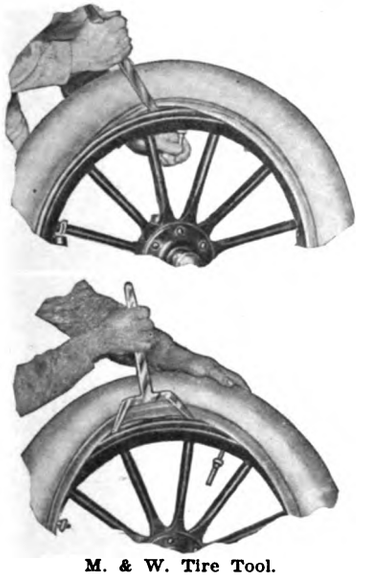
A Sharon (Minn.) farmer is alleged to possess an automobile which is propelled by vapor produced by the slacking of lime. Unfortunately, however, the agriculturist has not come out in the limelight sufficiently to be identified.

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TIRES.

In tires, those "feet of the automobile," in which interest both trade and public is hardly less keen than in the complete themselves, the year has brought forth notable developments.

The most noticeable tendency, of course, is in the extension and expansion of the mechanically fastened principle, though the very great advance of this type has been stubbornly contested by the already strongly intrenched "clincher," which has been improved past belief, hard bends, asbestos fabric to prevent rim-cutting, open heat curing, giving largely increased external strength and tougher vitality to the tread and walls, and, lastly, but not least, the introduction of simple and handy tools, greatly facilitating removal and replacement, have marked long steps forward in clincher tire development. This "battle of the tires," however, has been and is a royal one, with honors easy, for though, as indicated, the first named has gained much ground and



M. & W. Tire Tool.

favor, there is little reason to suppose that there is any real danger of its materially displacing the older form of construction—for the next year, at least.

Conspicuous in the mechanically fastened type the well known Fisk tire shows marked advance. The number of fastening parts have been reduced 25 per cent., a three-piece threaded bolt being now employed in place of the four-piece hexagon bolt with clip inside, this, of course, tending to greater ease in manipulation. All bolts and nuts, too, have been galvanized, rendering them impervious to rust. The clamping rings also show some alteration, this section being now made in a special shape that insures the tire against any undue wear in the event of its being run when punctured.

In the Fisk heavy car tire, which is enjoying much favor, an extra heavy outside tread is employed, thus materially protecting the envelope and making it possible to renew the tread when required. Samples exhibited which have given the creditable performance of over 17,000 miles without replacement show comparatively little wear and indicate the real progress made in the line of tires carrying great weights. This success is in no small measure due to the high quality of rubber employed, the tire as now made being of practically pure rubber, the erroneous idea that a pure rubber tire punctured easier and was not stiff enough to enjoy long life having been effectually dissipated. The reverse has proved true, and this conclusion carries with it the conviction that first cost of tires is not likely to be reduced in the near future, though the item of tire up-keep will show a big reduction.

The new perfected Dunlop tire, the advent of which gave a decided impetus to the mechanically fastened type, shows, so far as outward appearance goes, no change whatever. The reason is simply that none was required, the tire which enjoyed such marked favor the past season and which looms very big on the 1905 horizon showing no reason for change or chance of improvement, so far as mechanical construction is concerned. But the Hartford Rubber Works Co., its original makers, have been far from idle, busying themselves in the perfection of "open heat" curing, claiming for this process a marked superiority, and contending that the old style of curing in moulds overheated and weakened the side walls of the tire in the process of subjecting it to the great heat necessary to cure the largely increased thickness of the tread. This process, of which they claim to be the originators, is extended to all their product, including the Hartford clincher, the only changes in which is the employment of a hard "bead" and asbestos fabric to prevent rim-cutting.

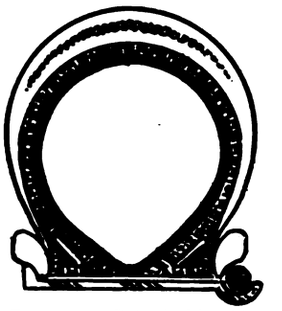
A full line of the time tried Turner endless solid tires, that "once put on never come off," are also shown with proof of their worth.

The Diamond Rubber Co., that enterprising, aggressive organization, which has made such a marked impress in the automobile world, show forth with a complete line in variety enough to satisfy the most exacting. In the mechanically fastened field they are there with a tire of the "turn-buckle" variety, which is adaptable to any regular clincher rim, and which seems to afford the acme of simplicity with the maximum of worth. In the regular Diamond clincher tires they blossom forth with what they term a "wrapped tread" construction, showing remarkable external strength and tough vitality to the tread and walls, while actually giving increased resiliency. This wrapped tread process is a long, slow cure in open heat, and its value is attested by the decided favor with which these tires have been received. Inner tubes, of which the Diamond Rubber Co. make a specialty, are made endless, are thicker and of heavier gauge, and have their full share of the improvements suggested by experience.

Nor in tire protectors or non-slip devices has the Diamond Rubber Co. been behind. In the former they show a protector of the most approved foreign type, which examination reveals to be every whit as good, if not superior, to anything shown by foreign makers, which in a non-slip tire they have a tread formed of a succession of "studs," which seems to do much toward accomplishing the purpose for which they are designed.

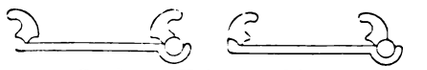
The B. F. Goodrich Co., standing as they always have for everything conservative and respectable in the rubber line, "stand pat" on Goodrich tires, so far as changes of construction are concerned. "None whatever were made, for none were needed," is their simple statement. And yet they have been far from idle, though it would take the eye of the expert to detect the change. Improvement there has been, and much of it in the employment of an even better compound, insuring the upholding of the Goodrich reputation for goodness. The only addition is a "thread fabric" tire, a fast, extra resilient construction, designed for electric carriages where long mileage is the great desideratum, or wherever fast work is required.

The Goodyear Tire & Rubber Co.'s chief



Goodyear Detachable Tire.

novelty is the new Goodyear universal rim, adaptable to all of the ordinary type of clincher tires. This rim consists of a single flat steel band, rolled to shape, and adapted to fit any wheel with a wood felloe carrying



Goodyear Universal Rim.

standard clincher tires. Two removable endless steel flange rings, adapted in contour on the one side for engaging the ordinary clincher type of tire, and on the reverse side for the Goodyear tire itself, where it has a steel locking ring, which locks the flanges in position. The whole is claimed to be rendered rust proof by galvanization.

This concern shows, in addition, a complete line of endless solid tires and much interesting matter regarding them.

The G. & J. Tire Co., makers of the original "clincher," and under whose patents all American clincher tires are made, return to first principles in the abandonment of all lugs, asserting with emphasis that a lugless construction makes the tire less liable to self-destruction and is the improvement in every way. Aside from this departure, the only change observable is a slight lengthening of the bead on toe of the outer casing. The G. & J. Tire Co. have been fully alive to the lessons experience has taught and have profited by them.

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Morgan & Wright, with the reputation of "doing things," have one of the most interesting tire exhibits in the show. In their demonstration of the M. & W. clincher, the goodness of which they back up with a large bunch of testimonials, they employ what is really an invaluable little tool, cut and description of which appear elsewhere in this issue. By its use a clincher tire may be detached and attached in a minute and a half, a feat they perform countless times for the enlightenment of the skeptical. Through their courtesy the G. & J. Tire Co. are permitted the use of this time and trouble saver and will furnish it regularly.

Morgan & Wright show also another useful and handy article in a crotch stick, for use on the front wheels, preventing them from revolving when working on them. The end of the stick resting on the ground or floor is shod with a blunt iron point, and while simplicity itself, this little article is of much practical value.

A recently consummated arrangement has been the taking out of a license to manufacture and market the new Perfected Dunlop Tire, so that Morgan & Wright will now be in a position to supply this tire, in addition to their own M. & W. clincher.

In solid tires the Firestone Tire & Rubber Co., of Akron, O., have a most instructive and interesting display.

Proudly exhibiting data showing that every rubber tire in service at the World's Fair was a Firestone, and that every commercial wagon (except one) operating in St. Louis during the same period was fitted with Firestone Tidewater Tires, they also show the performances of the tire under various conditions, all with excellent results.

In construction the Firestone Tire has steel cross bars inserted laterally at regular intervals near the base, vulcanized in the rubber and becoming an integral part of it. The tire is retained in the channel by two cold-drawn steel wires, made into hoops, which rest on the shoulder formed by the cross-bars and hold the tire perfectly solid with an even compression throughout. The fact that there are no internal cavities to cut out or to wear the rubber, that a new section of any size may be quickly inserted, are a few strong Firestone features.

ACCESSORIES.

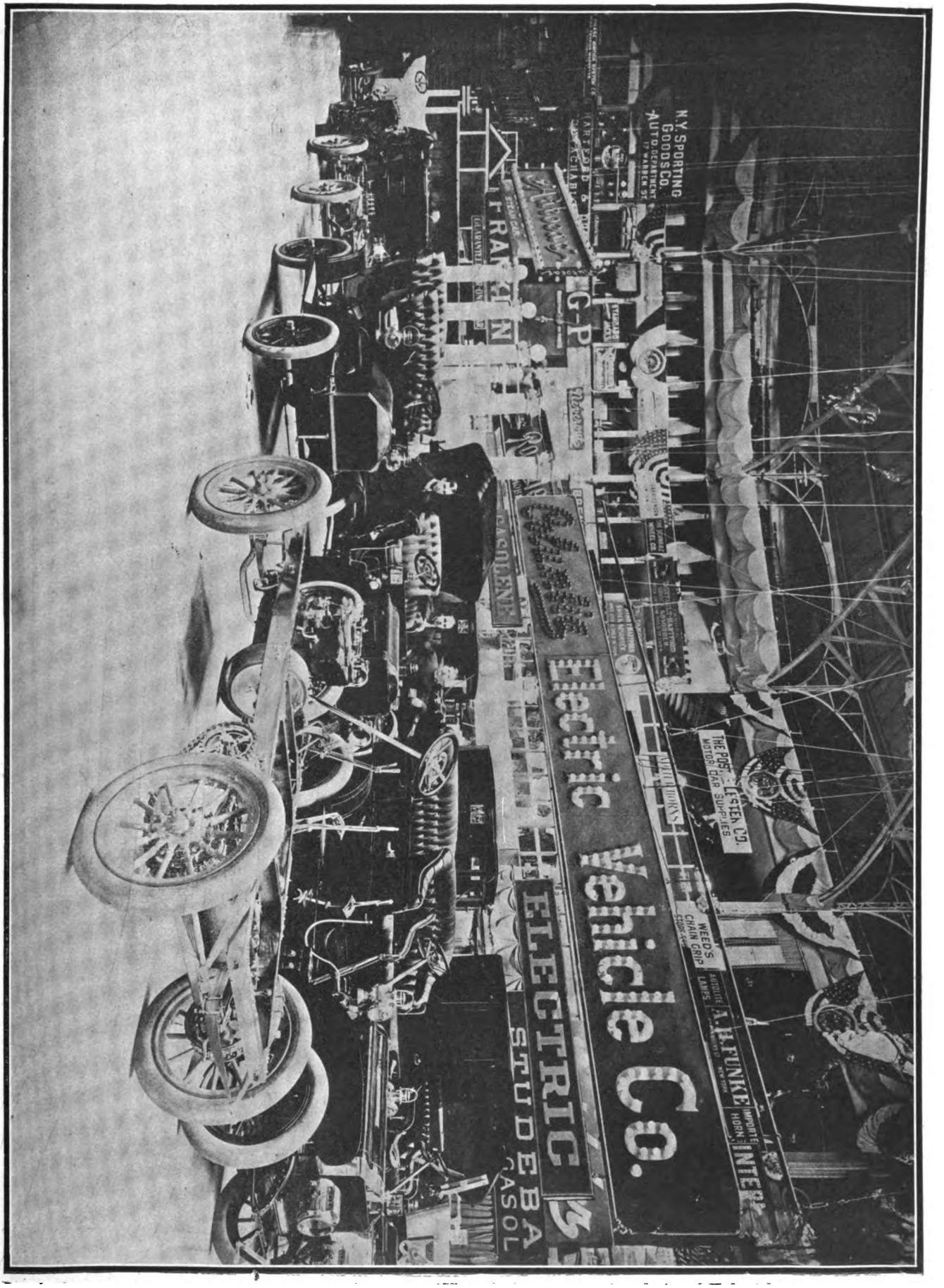
Of accessories and sundries or specialties there has been an amazing multiplication. They are of all sorts, sizes, shapes and conditions, and perform all sorts of functions in all sorts of ways. The greatest influx is of speed indicating instruments and of non-puncturing and non-skidding devices and of automatic tire inflators. All of them are ingenious; some of them will prove useful. Most of the standard accessories—lamps, for instance—have been splendidly improved, the better known wares now comparing favorably with the best foreign product, which, is, in fact, rapidly disappearing from the American market.

IGNITION ACCESSORIES.

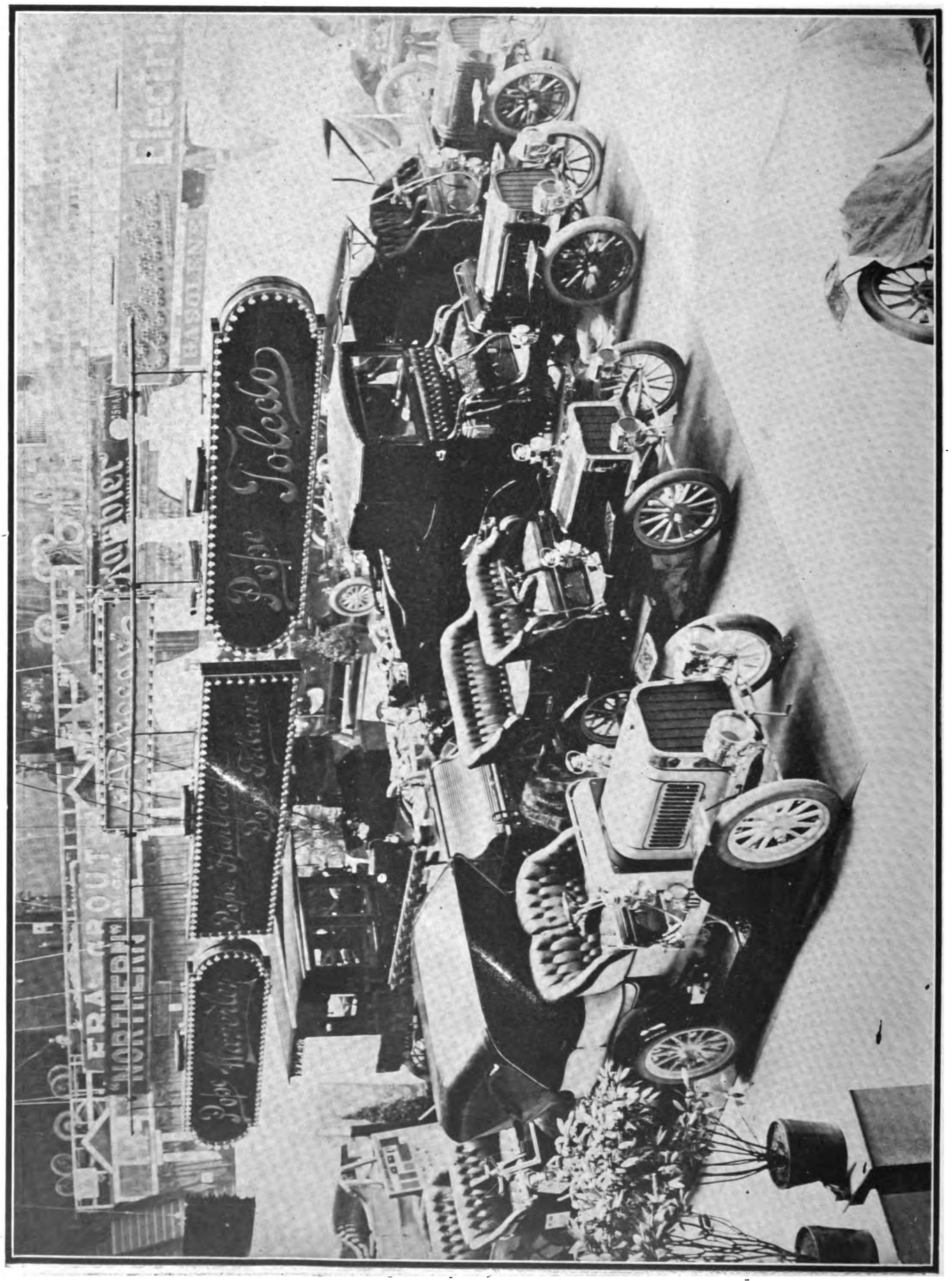
Induction coil making has reached a stage where it is a matter of improving upon improvement to such an extent that radical changes of any nature in this field are hardly to be looked for. Not that the apparatus of the present day exemplifies the last word in the direction of betterment by any means, but, short of the unexpected, the induction coil may be relied upon to retain its now-a-day familiar features unchanged for some time to come. And unexpected changes are not made by the manufacturers on the first of each passing year, they come as a bolt out of the clear sky; existing things are revolutionized, and every one hustles to get in line with the fortunate inventor. Nothing of this order has appeared on the horizon during the last 365 days, nor is anything radical foreshadowed by what may be gleaned from a sifting of the aggregate showing of the coil makers at this year's exhibition.

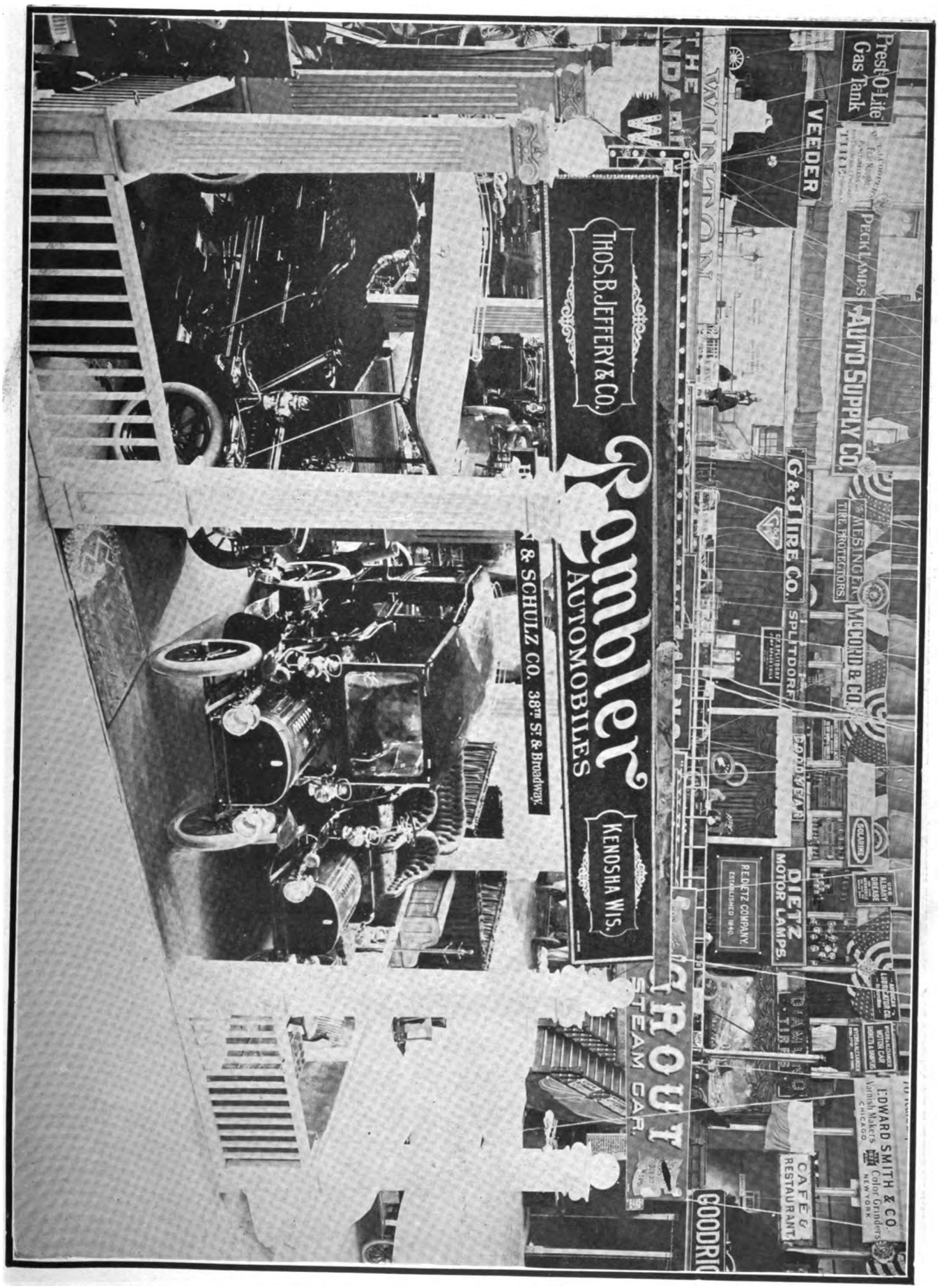
The "tilting bridge," or hinged vibrator, permitting of the instantaneous examination of the contact points without any disturbance of the adjustment, as shown on the Pittsfield and American coils, is an innovation that will not only be appreciated by all users, but will tend to lighten the makers' troubles, for many a good coil has received its quietus at the hands of an amateur adjuster when in reality the battery was at fault. The makers of the Pittsfield coils have come to recognize the merits of the French article, and their product is now in

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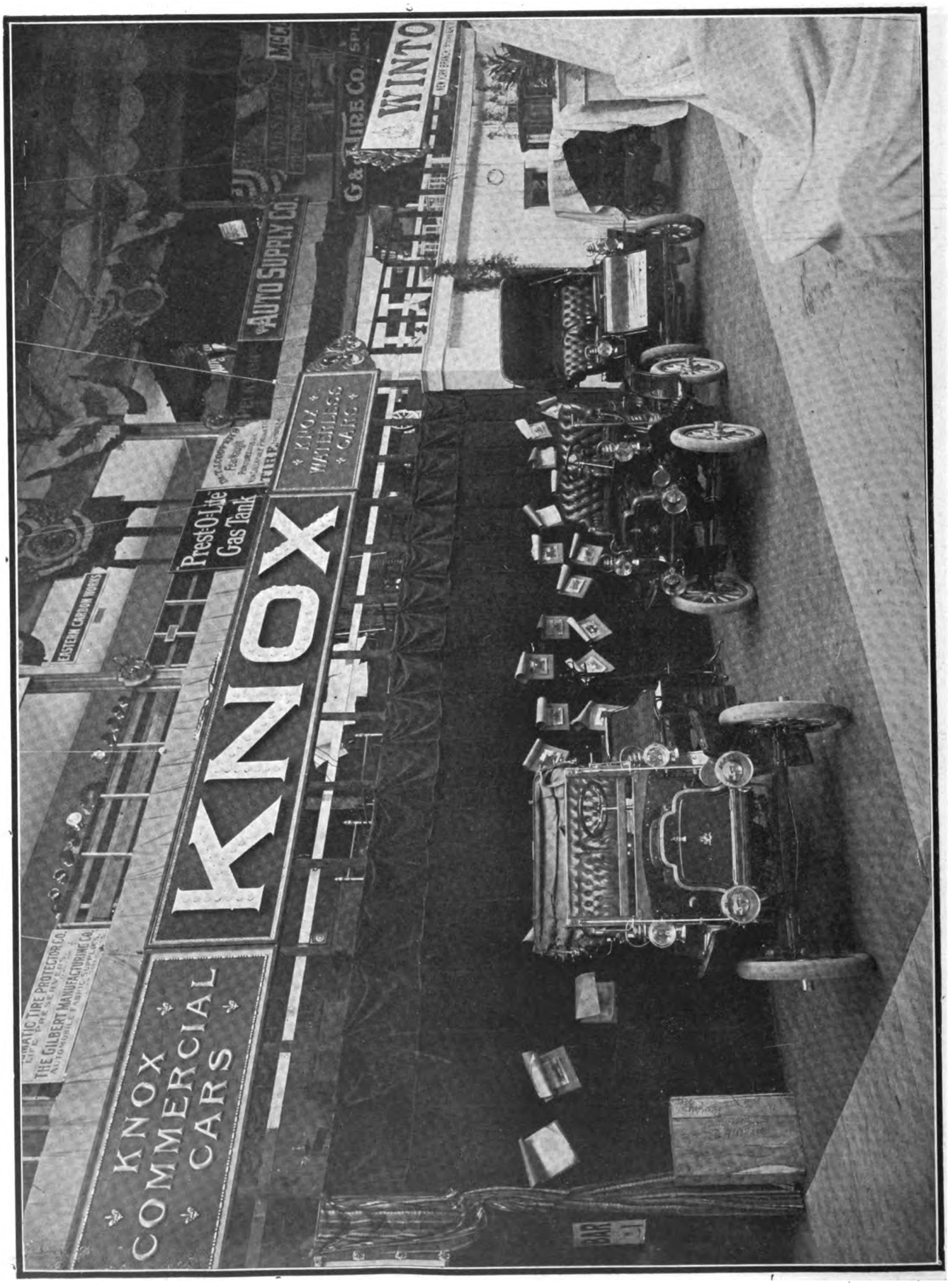


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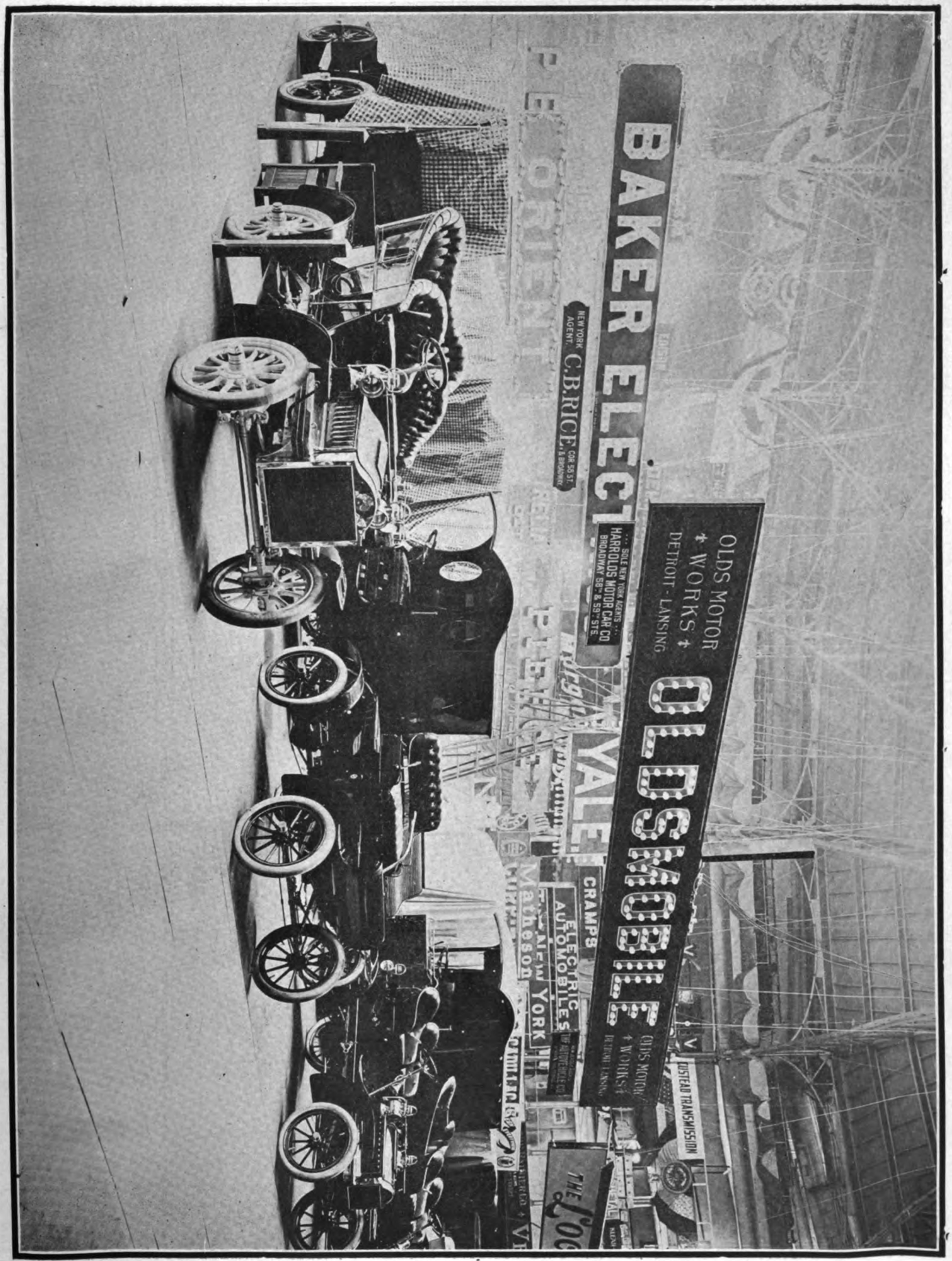

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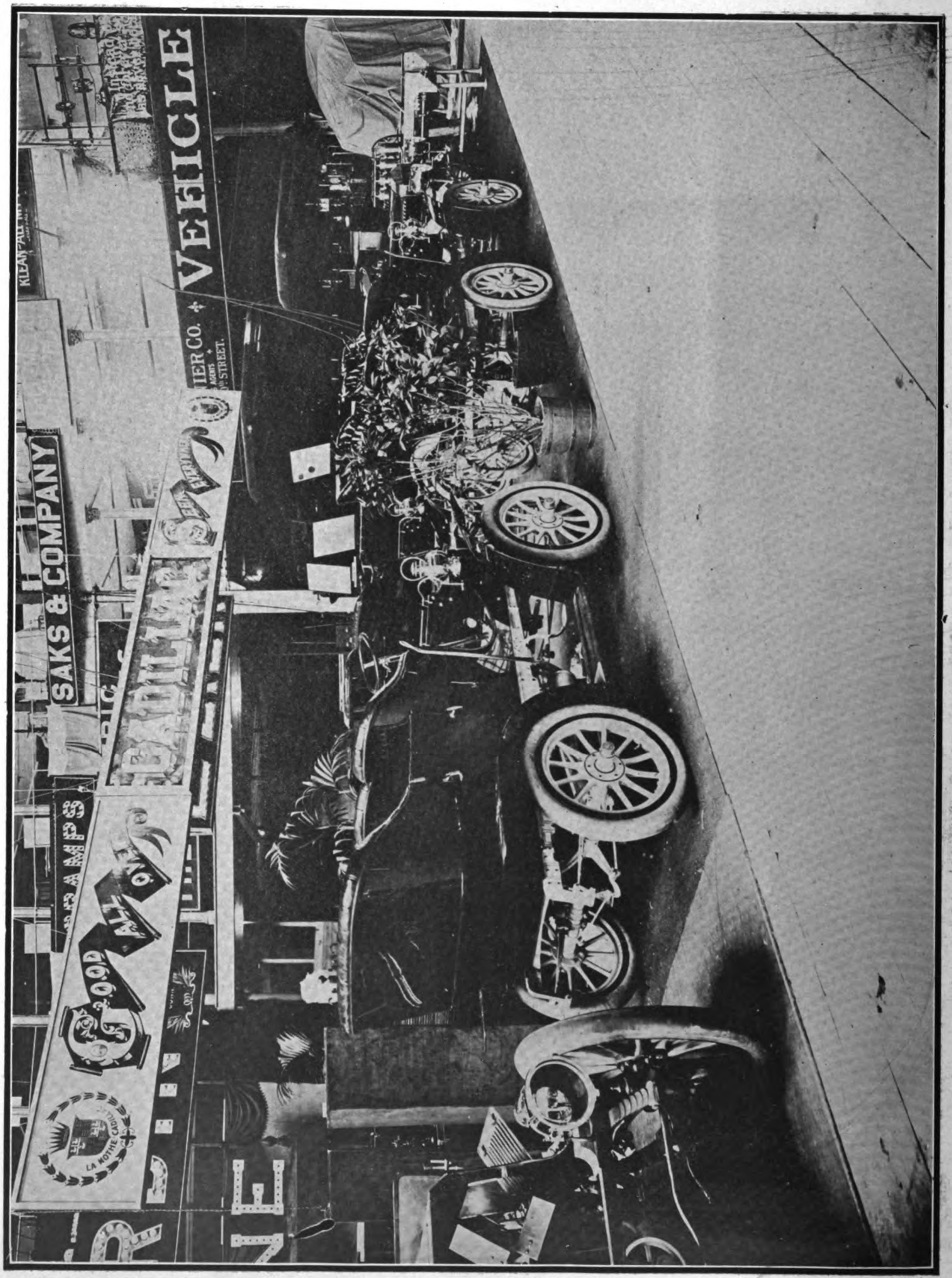
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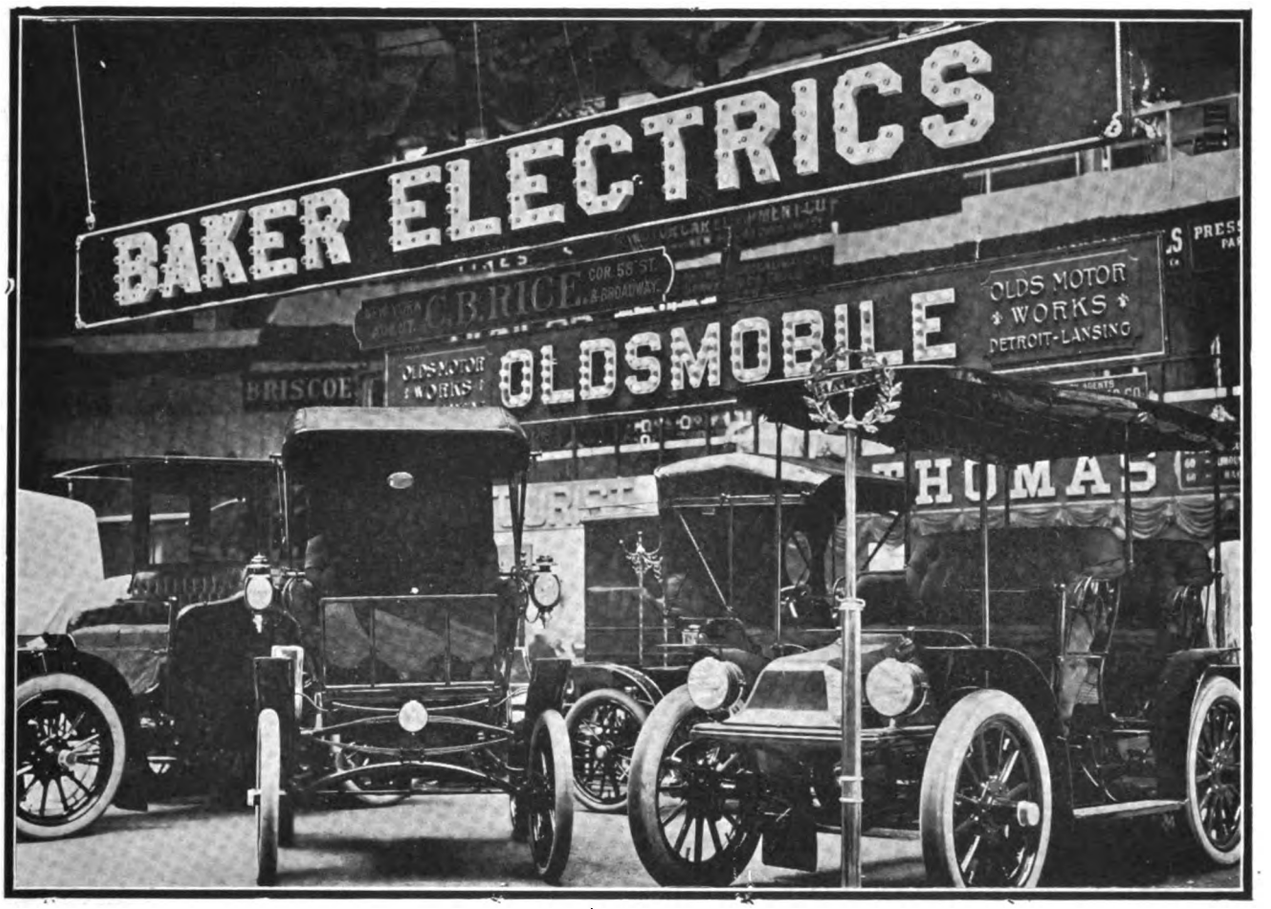
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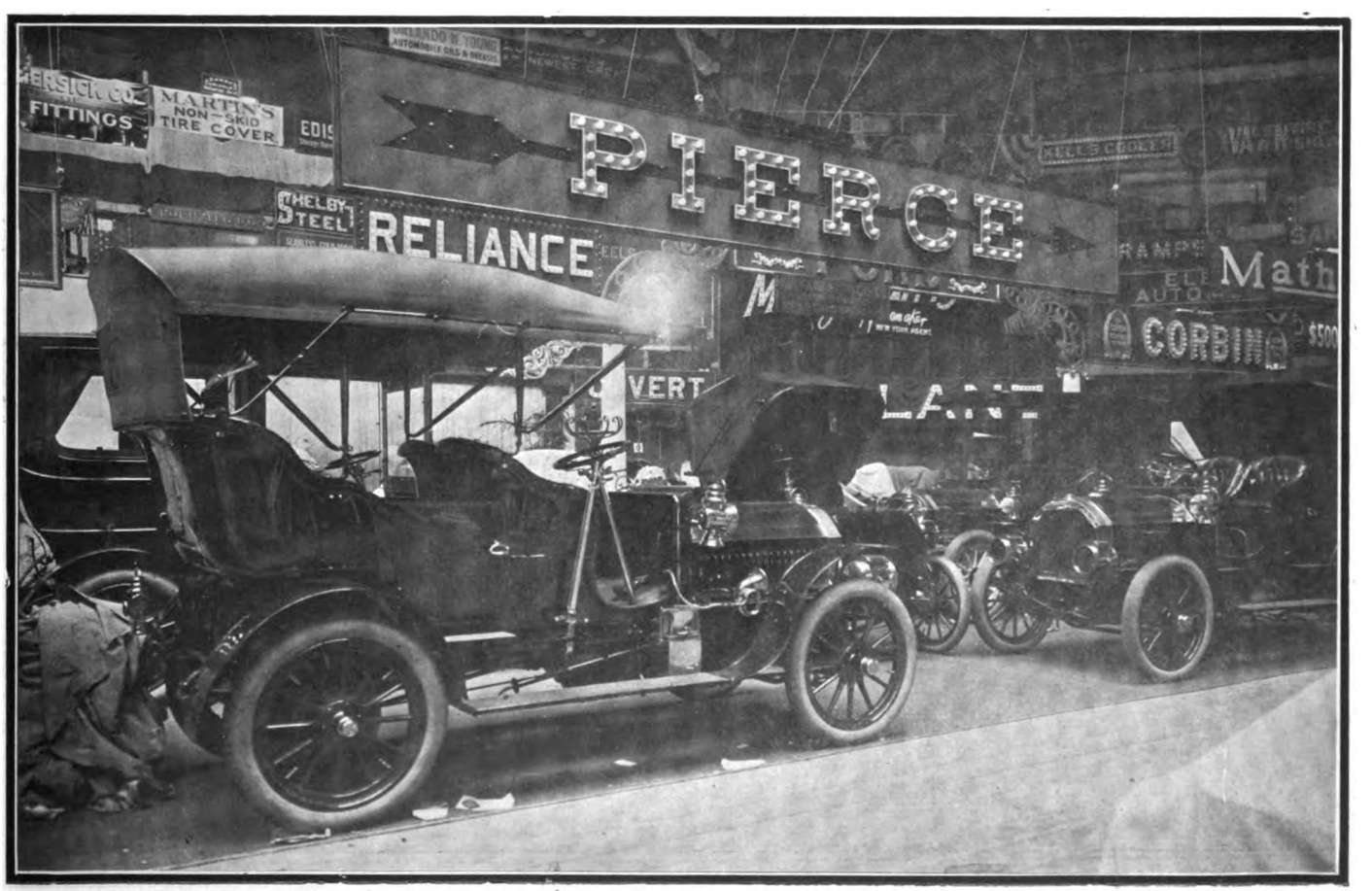


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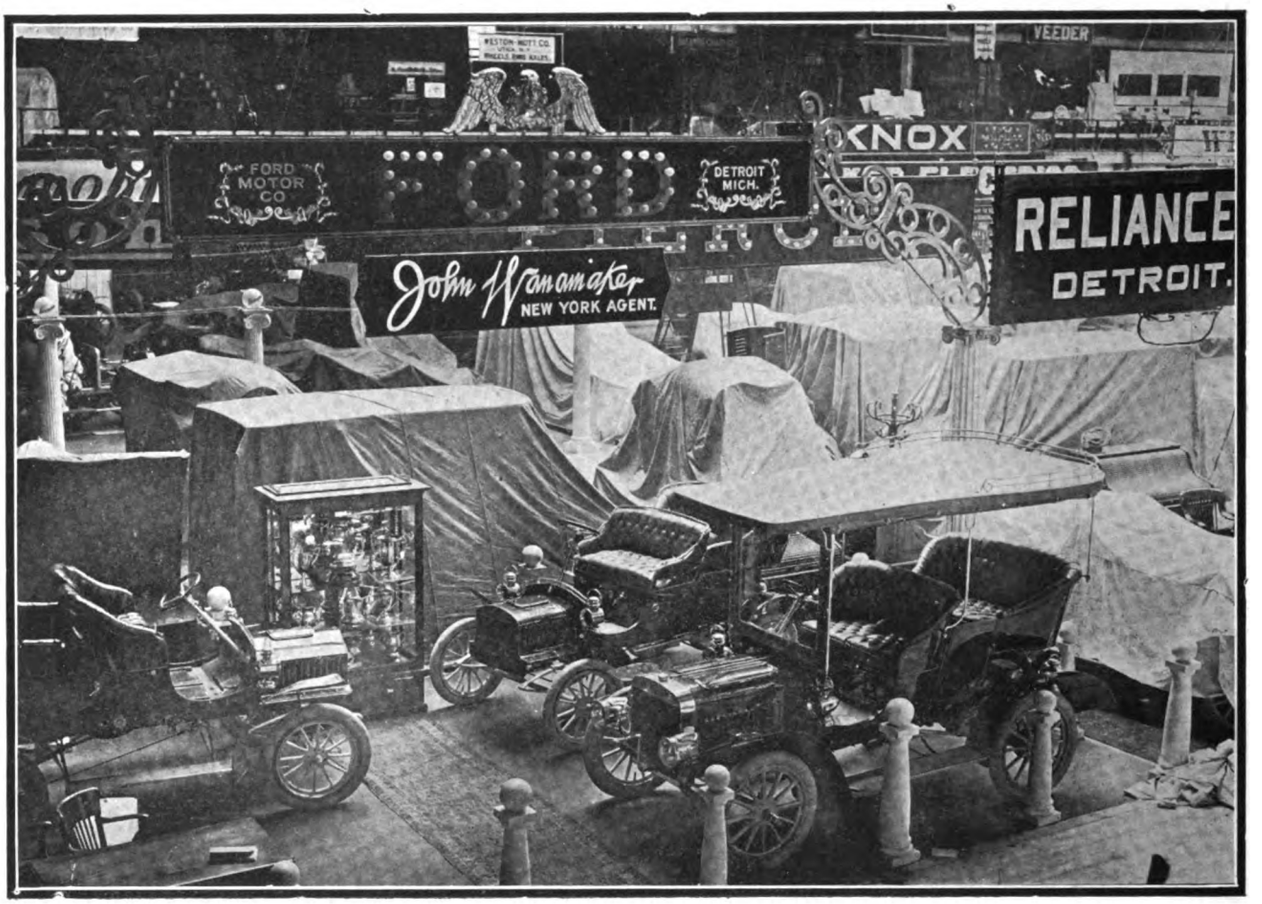


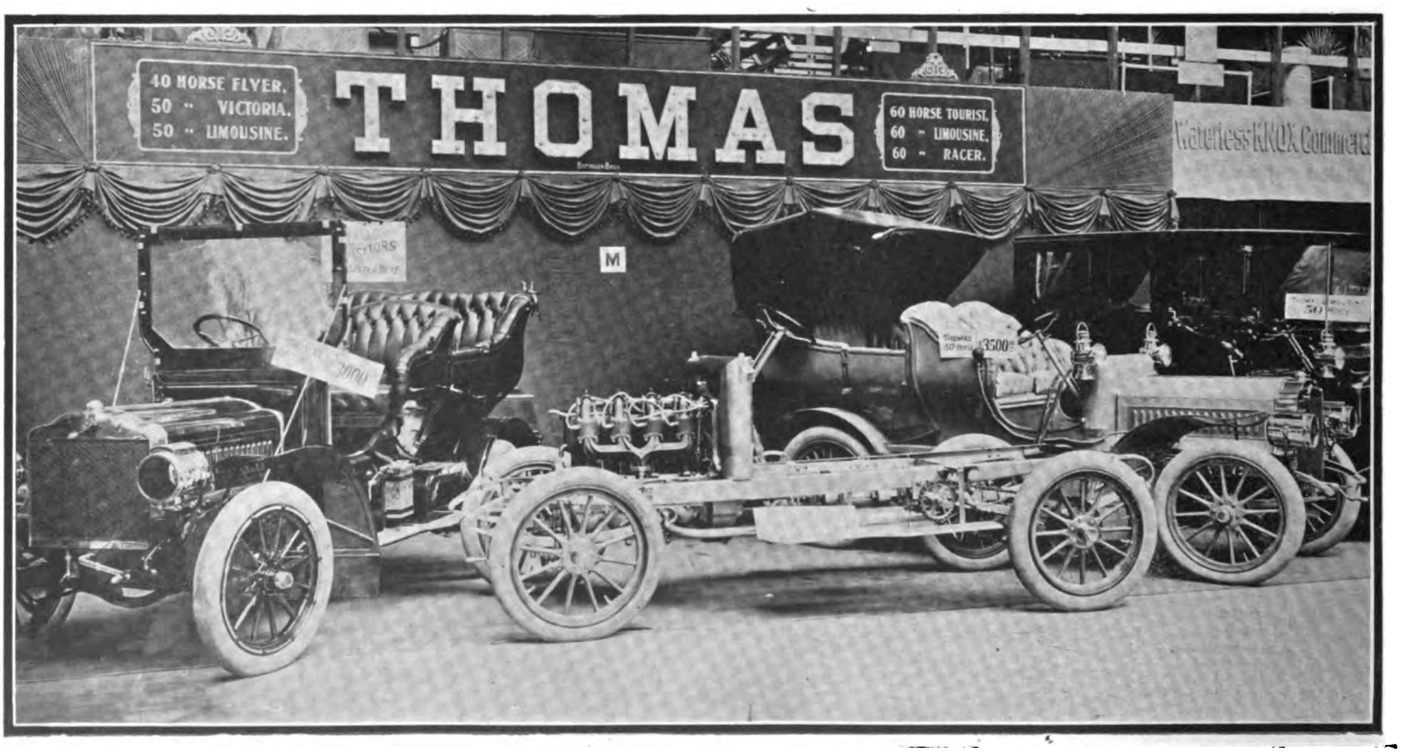
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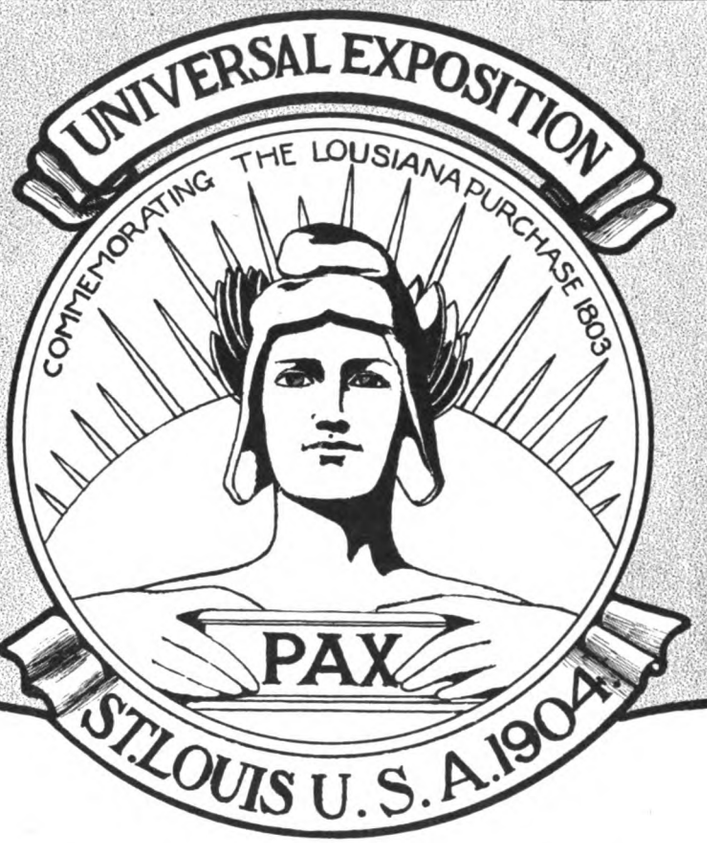
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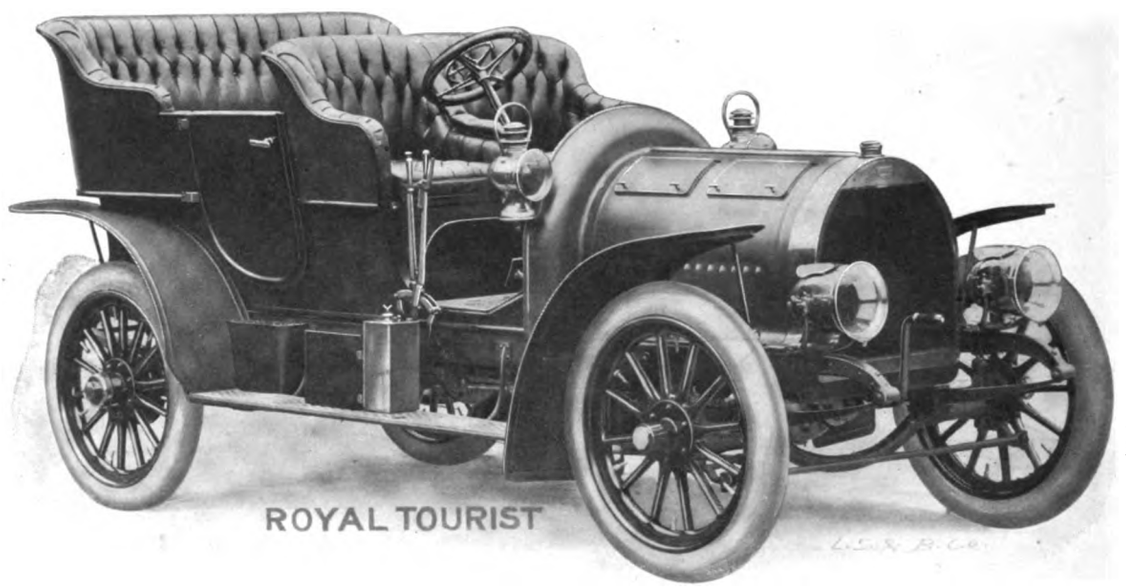
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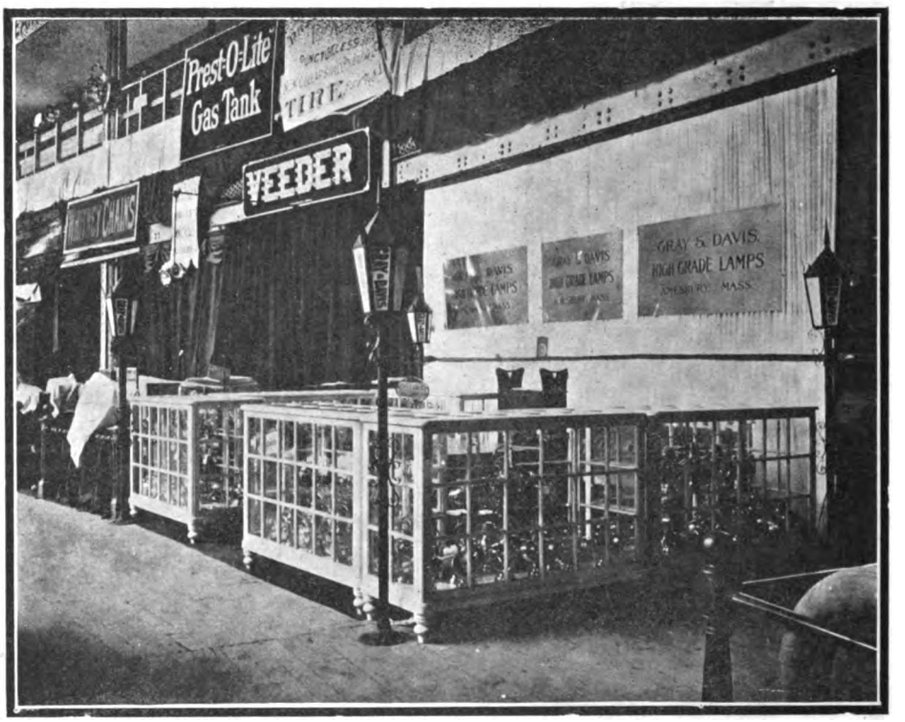
its essential features, as well as in detail, such as the adoption of spring screw binding posts and sectionalizing the units for convenient replacement, patterned after the latter.

That weak point of the majority of early attempts at high tension coil making—insulation—has been practically overcome entirely, so that it is a poorly made coil indeed that should suffer nowadays from punctures in the secondary itself or between the latter and the primary or the condenser. One of the most effective methods of accomplishing this part of coil construction has been brought about by the use of a moulded receptacle of insulating composition. Spaces to exactly accommodate the primary, both sections of the secondary, which are separated by a substantial insulating wall between them, and an independent pocket at the side for the condenser, are provided, the mould being made in two pieces. The windings and condenser being inserted, the other half is placed over them and both are sealed by melting the composition together at the joints. This is a feature of the American coils.

Another early trouble was the more or less frequent puncturing of the sparking leads where high tension was employed, either from inherent defects in the insulating covering itself—this in many instances being totally inadequate for the purpose—or after it had been attacked by waste acid or oil or a combination of all three. First attempts to remedy this resulted in wires which were little short of cables, so many were the layers superimposed over one another and over that important little piece of wire. Great advances have been made in this direction, and the present day wire, which the makers one and all assure the intending buyer is absolute proof against the ravages of the three destroyers above mentioned, will doubtless fulfil to a very large extent all the good things predicted for it.



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Improvements in distributing and commutating devices are confined almost entirely to the detailed make-up of the apparatus, which in some instances has been brought to a state of simplicity consistent with efficient working and rapid investigation of its "innards" when trouble is met with. This is exemplified to a great degree in the distributers and commutators shown by the Pittsfield Coil Co. Screws have been entirely eliminated, and each of the contact elements is not only self-contained, but is so placed that it may be instantly lifted from its seat with a pair of pliers and without disturbing any other parts or adjustments. The burning and consequent rapid deterioration of contact surfaces subjected to the high tension current has been overcome by the employment of hardened steel, and in one instance by the use of steel balls similar to those employed in bearings—in fact, a ball bearing contact. Trouble from this source is further guarded against by filling the commutator or distributer with heavy oil or grease, which serves the double purpose of preventing the sparking and oils the bearing of the mechanism, as well as illustrating the fact that grease and the high tension current are on speaking terms, and the former has nothing to fear from a little lubricant. This is the Leavitt Ball Contact Timer, made by the Brooklyn Automobile Co. and handled by Charles E. Miller.

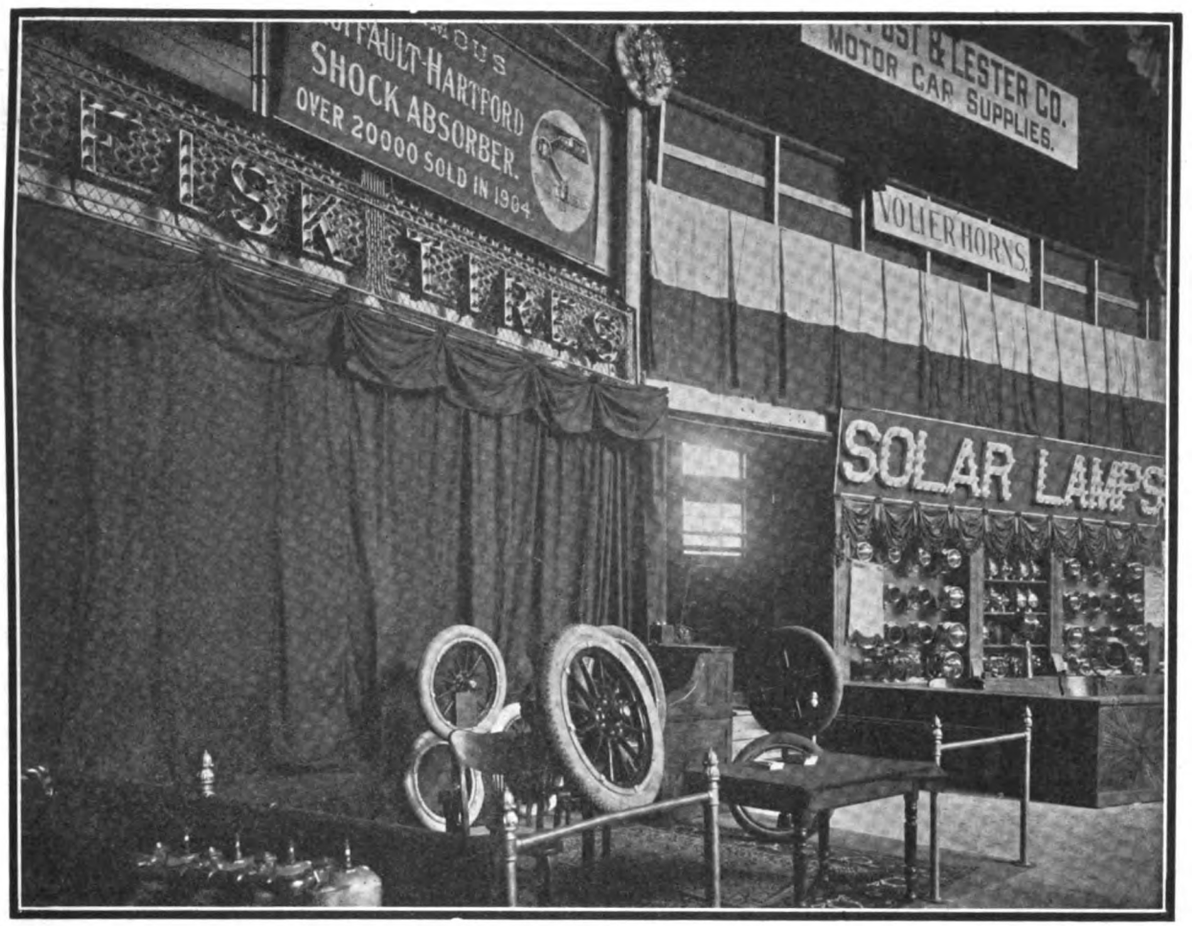
Speaking of this, the makers of small direct current generators have followed the lead of fan motor designers and adopted the oilless bearing, as oil, grease and their accompanying load of dirt when distributed over the commutator of the small dynamo—invariably the case under road working conditions—always proved a detriment to the latter. This is one of the improvements noticeable on the "Apple" dynamos, made by the Dayton Electrical Mfg. Co., which concern has brought its product to a much higher state of efficiency by increasing the output of their machine to 10 volts and 5 amperes, and the use of wide and heavy brushes of copper gauze embedded in carbon, with regulating devices similar to those in vogue on larger generators. Form wound fields complete the resemblance, so that these dynamos are now practical replicas in miniature of those employed for lighting purposes. Motor generator sets of the same capacity for use in conjunction with a 110 volt supply are provided for those who do not wish to install a generator on their cars. Further improvements have been effected by the addition of rawhide pinions for direct drive from a shaft or periphery of the flywheel, for which purpose they also supply a toothed shell to fit any of the standard flywheels. The latter may be attached by merely drilling and tapping for a few machine screws, and in conjunction with the rawhide gearing on the dynamo make a very smooth running machine. This is a variation of the leather bevel gear flywheel drive, and overcomes any lost motion due in the latter case to a worn bevel wheel or insufficient friction from any cause. An innovation that will be appreciated is the use of a storage battery in shunt with the machine and always charging, so that the ignition current taken from the dynamo is boosted by the battery and an adequate supply at constant potential is maintained. The accumulator is in the shape of convenient units, four of which are used in series to give the same voltage as the generator, and as they are of 30 ampere hours' capacity, the current is further utilized for two six-candlepower headlights and a four-candle tail light. Control is through a three way snap switch on the dashboard, making any desired combination but a matter of one or two turns. This firm is also showing a line of coils with a two piece, spiral spring controlled vibrator, for which advantages over the ordinary type are claimed.

Plugs have doubtless come in for their share of attention during the last twelvemonth, but, aside from a few novelties, there is not a great deal of either advance or radical improvement over previous existing types to place on record. Built up insulation of transverse layers of mica put together under powerful compression—a foreign idea, originally hailing from Germany and scoffed at to greater or less degree by most of the domestic makers a few years back—has come to be quite a general favorite. The "Constant"—a double ended plug with a double gap at each end—is one of the few new things noticeable, and has some features that merit attention. It is, in brief, two plugs placed end to end, though made practically in one piece, heavily mica insulated and having, instead of the familiar platinum points, a bridging point of iron with a gap from each end of it to the rim of the plug. Either end of this plug may be inserted in the cylinder, the exposed portion being protected by a cap and mica cover, rendering the working of the plug visible. In case of accident it may be instantly reversed, and, if desired, either end may be cut out by short circuiting it. This should in a measure at least obviate the necessity of carrying extra plugs.

Mosler, of "Spit Fire" plug fame, shows a plug of his make designed for a thousand horsepower engine, and while it is not likely to be in universal demand, makes an interesting exhibit. An innovation in plug making is to be found in an ingenious attempt to do away with the inevitable sooting, so common to many, by providing two small air inlets on each side of the core of the plug and through which the suction of the engine will draw air into the cylinder between the walls of the plug, thus preventing a deposit of this objectionable carbon. To avoid an escape of compression via the same passages they are automatically closed by ball checks on the compression stroke.

Switches have been brought to a stage of improvement where compactness and convenience are prominent features, those shown by the Pittsfield makers exhibiting the same absence of screws with consequent simplicity and the placing of all parts behind the hard rubber base, thus protecting them from moisture. A novelty in the shape of a switch is provided either with a lock or a combination, and no one not possessing one or the other of these essentials can start the car. Its object is to assist the absent minded man who is forever mislaying or losing the ordinary plug cut out, by providing something that cannot get away from him. It is termed the Parker lock switch, and is manufactured by a firm of the same name in Newburg, N. Y.

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C. F. Splitdorf, the "man who makes coils" and has been making them for a good many years, has, in addition to bringing his product right up to date, turned his attention to the magneto problem, and has evolved a machine which should add to his fame. This is a high tension alternator, with permanent fields of circular form placed end to end—it is, in short, the result of experiments on the inventor's part in revolving a complete induction coil before a magnetic field. Both the primary and secondary windings are on the arms of a laminated H armature of well designed proportions, the condenser being located at the side and the collector and distributer just above it so that it forms in itself a complete self-contained ignition outfit that has many good points to recommend it. The same maker has delved into the effect of hysteresis on the magnetic core, and to reduce the latter to a minimum has brought out a coil with ventilated core, this being accomplished by drilling holes longitudinally through the latter. Beyond a certain temperature both iron and steel are not affected by magnetism, but rapid pulsations of magnetic force, such as are set up in the core of a coil when working, are productive of heat, and it is to minimize the effect of the latter that these air passages have been made. As the coil is used in vertical position, the ascending warm air causes them to act much the same as a chimney on a miniature scale. This is a refinement in coil building hitherto unsought for.

The principles of the inductor alternator are such as to render its application to an engine both simple and economical, and it is strange that this system has not come in for more serious consideration on the part of engine builders. The Polyphase Ignition Co. have adapted this principle to the sparking problem in a manner that presents many and obvious advantages to one familiar with its workings, and the lack of attention accorded it is due in numerous instances to the fact that it is so far above the calibre of the many who are still wedded to the dry cell that it is regarded with more or less suspicion and deemed a matter of endless complications, as is likewise the high tension magneto and synchronous distribution. As applied by this concern, a circular permanent magnetic field is mounted directly on the main shaft of the engine, and the flywheel is cast integral with segments so as to form the inductor. Either single or double phase may be used, and the machine has been designed to produce a flattened current curve on the magnetizing impulse, dropping sharply to a peak on the demagnetizing side, so that in the latter case one curve follows the other so closely that they almost coincide, with a consequent elongation and increased duration at the sparking terminals. The distributor used in connection with this generator is patterned after the "comb" collectors used on static machines, and, as in the latter, the teeth do not come in contact with anything, but are passed close to what in the ordinary distributor would be the bearing surfaces, thus producing an additional intensifying gap. The field being mounted on the engine shaft, this permits of a very wide range of advancement or retardation in the time of ignition. This system merits close attention on the part of designers desirous of bringing this feature of their motive power to an advanced state of efficiency, and while it may not have been solved to a certainty by the concrete example of its application cited above, more study will be given it in the fulness of time, and then many will wonder why it was not taken up sooner. But as it marks a step in advance of the high tension magneto with synchronous distribution—and not many have come to the latter as yet—it is too much to expect that this step in the process of evolution toward a higher standard should be passed over.

The ignition problem has proved a boon to the dry cell industry, and doubtless enough are now turned out annually for this purpose alone to reach across the continent. The makers of the "Ever Ready" cells have almost doubled the capacity of their batteries, which now test to 30 amperes in the case of the standard, or 6-inch, size, and 35 amperes in that of the 7-inch, as compared with an average of 15 to 18 amperes, which represents the maximum heretofore obtainable. Sparking apparatus is being wound almost universally for 8—10 volt current, so that no attempt is being made to increase the voltage of dry cells, particularly as the latter would

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tend to greatly shorten the life. The automatic battery case is an innovation provided for the benefit of dry cell users by the American Coil Co. With its aid it is only necessary to insert the cells and put the connecting strip in place. Two thumb nuts are provided which render the latter "fool proof" and prevent its insertion in anything but the correct way. This strip has spring brass wires which, when in place, engage all the binding posts of a four or six cell set and make automatic connections.

To sum up the results of careful observation of everything in the shape of ignition accessories, little can be said except that improvement has in the main been confined to detail, and that on the whole matters are in very much the same condition as they were a twelvemonth back, where this end is concerned.

TIRE APPLIANCES.

Throughout the show it was obvious that if any particular line had been omitted, it was certainly not tire protectors and non-skidding devices. The Republic non-skid bands, manufactured by the Republic Rubber Tire & Shoe Co., New York, showed a leather non-skidding cover. This cover can be applied to solid, cushion, or pneumatic tires, and is fitted with large brass studs. H. & F. Messenger Mfg. Co., New York, displayed their detachable leather tire protector, which is merely strapped on the rim of the wheel. Le Marquis is another tire cover made of leather with metal studs. The Detroit Motor Supply Co., Detroit, Mich., have a heavy puncture proof leather case or cover, which is rather more thickly coated with steel studs than the others. It certainly has a solid appearance, and is also strapped to the rim of the wheel. The Pneumatic Tire Protector Co., New York, exhibited a rubber cover which is far lighter than the other protectors, though perhaps less effective. It only covers that part of the wheel which comes immediately in contact with the ground.

There are a number of "next-door neighbors" to these puncture preventers—one is an adhesive repair patch shown by the Charles O. Pingley Co., Rahway, N. J. No cement is necessary to make it stick. It incorporates the porous-plaster idea, the heat generated by the road friction softening the rubber and causing the patch to adhere fast to the inner tube. By far the most amusing exhibit of this kind is what maybe termed a puncture alarm, made by the Worcester Auto Co., Worcester, Mass. Through the use of a contact arm bearing on the tire and two concave discs a clicking noise is produced on the alarm immediately the tire is deflated badly enough to cause any detriment to it. The Garlick Auto Prop Co., Paterson, N. J., contend that tires suffer as much from the car resting on them while not in use as they do from actual traveling. As an aid to this trouble they showed a wooden tripod stand about thirty inches high for the purpose of placing under the axles and elevating the machine when in the garage. Four of these tripods are needed to keep the tires from the ground.

Efforts to automatically inflate tires are unexpectedly numerous. The Hibbard Automatic Tire Pump, marketed by McCord & Co., of Chicago, presents an ingenious device of the sort. The pump is fastened to the spokes with spoke clamps. The hose of the pump is then attached to the valve of the tire in the ordinary manner. The pump is operated by means of an eccentric arrangement which surrounds the wheel hub, and one part of the device is held against rotation by a cord, which may be fastened to the mud guard or some other fixed portion of the car above the wheel. The apparatus is equipped with a cut out appliance, through which it ceases to act after a pressure of 110 pounds is reached. In the event of a leak the pump will maintain the pressure, though, of course, it would necessitate continued action. Anyhow, with this pump the tire will always remain at a uniform point without attention. For inflating the rear wheels the device may be applied, and the rear part of the vehicle being jacked up, the tires may be filled by starting the engine. The Brown-Lipe Gear Co., Syracuse, N. Y., also have a pump which is supposed to eliminate much of the trouble caused by deflating tires. This pump is worked by the engine only, the spark plug must be unscrewed, and the air valve is screwed into the cylinder, while a long rubber tube connects with the tire. It is claimed to do the work in three minutes, and is the invention of Arthur G. Bolster. The Auto Supply Co. have the P. T. C. Power Pump, which must be attached to the vehicle in such a manner as to allow the friction pulley to be brought in contact with the fly wheel of the engine, when the pump is moved along the sliding base by the thumb screw. One end of the hose is attached to the valve in the tire, and the other end to the pump, which is started by turning a screw to the right. The pressure is registered on the gauge, and when the necessary pressure is obtained, the screw must be turned to the left. A multiple gear pump has been launched by the Wray Pump & Register Co., which is said to require less than half the ordinary power to drive it. The same company has also a pressure register for the purpose of ascertaining whether the tires are evenly inflated. The Gleason-Peters Co. pump is not a bad idea. When in use the handle is horizontal, but when it is folded it is vertical, and the foot rest closes with a spring on the cylinder of the pump, making it very portable. The Ultra Compound Pump is being shown by the Post & Lester Co. This pump has an indicator on top for the purpose of knowing exactly the air pressure upon the tires.

The Champion automobile repair kit is displayed by Patterson, Gottfried & Hunter, New York. The Calculograph Co., of New York, demonstrated a time register, to be used principally by garage people who rent cars by the hour. It marks on a card the exact time of departure, and on another space will naturally mark the incoming time. The Sprague Umbrella Co. show a sixteen rib extension top, the ribs being of tempered steel and the covering of mohair. The Wheeler Mfg. Co. had some new light canopy tops on view. The one for touring cars weighs 40 pounds, and an extension top of the folding type weighing about 35 pounds.

Covers of every conceivable type are made by the Gilbert Mfg. Co., New Haven, Conn. They have some good waterproof covers of combination rubber and cloth for lamps, and one new feature in the way of a similar cover for automobiles, which clothes every part of the vehicle except the wheels. The Poughkeepsie Art Pulp Co. have a new touring car side hamper, through which the dust cannot penetrate. Saks & Co., New York, have a new kind of automobile hat made of leather, but shaped something like a Panama, which it is supposed to represent. They also showed some novelties in the way of women's headgear, made of red leather, with a black brim.

NEWNESS IN LAMPS.

Lamps are of an infinite variety, but for downright novelty, L. Angiulli, New York, easily takes the palm. He seeks to make his lamps not only useful, but unusually or-



One of Anguilli's Lamps.

namental. There is on his stand, among others, a revolving searchlight in the shape of a bell. When not in use it hangs down exactly like a bell; it is made of brass, with a straight, wooden handle. Another ostentatious light was one in the shape of a helmet, with two visors, which may be regulated to obscure, or partially obscure, the light. Another helmet lamp is shown with a white eagle on top and without the visors. The Twentieth Century Mfg. Co., New York, displayed some handsome lamps. They have just launched a new generator in which the conditions of water and carbide are reversed, by the carbide dropping in grains in the water and thus causing the gas. The C. P. Ham Mfg. Co., Rochester, N. Y., have some handsome oil burners. What is termed the cold blast principle has been introduced. The idea is that a fresh supply of cold air gives a brighter light. They have a double body, through which the warm air is forced out at the bottom, leaving only fresh, cold air in contact with

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the flame. A new tail lamp is also exhibited, which is made with a solid brass handle, and also serves the purpose of ascertaining the cause of trouble in the machinery. It has a white light on the side and the usual red light in front. The N. Y. Coach and Auto. Lamp Co., New York, have a lamp called the latest French creation. It is round in shape and is fitted with a foreign lens, and throws a powerful light, and, like a camera, has a focussing arrangement in front. Of course the Badger Brass Mfg. Co., Kenosha, Wis., show their famous Solars to advantage, their parabolens generator head lamp being the most recent creation. The innovation consists of the combination mirror reflector and a polished magnifying plano convex lens in front. The Autolyte projectile type is another powerful light, and is fitted with Bausch & Lomb lenses. The Motor Car Equipment Co. have a unique lamp, shaped like a ball and termed the Fire Ball. The claims made for this shape are the absence of seams and ease of cleaning. It goes without saying that Gray & Davis, with their Bullet lamp, were conspicuous, the lamp being made more conspicuous, perhaps, by one or two crude efforts at imitation of the Bullet's shape, that were thinly disguised under other titles. A new oil tail lamp was included in the exhibit. The Atwood lamp is shown on Chas. E. Miller's stand and is quite equal to the Atwood reputation.

A new low-priced gasolene pump is exhibited by the S. F. Bowser Co., Fort Wayne, Ind. It works well and costs only $12. The company had their usual stock of gasolene tanks and equipments. The Ironclad Mfg. Co., Brooklyn, N. Y., showed the model of a new steel-hooped metal barrel, hermetically closed, and opening from the top by means of springs.

DELUGE OF SPEED INDICATORS.

Numerous speed indicators have recently been placed on the market and quite a number were shown in different exhibits. Among the newest ideas of this kind is the Auto-Meter, manufactured by the Warner Instrument Co., Beloit, Wis. It is a combination distance and speed indicator, showing the rate at which the car is travelling and the distance covered on one particular trip, also the entire distance covered from the time the register has been in use. A magnet is its power, and as it works independently of weights, liquids or air, the makers are of the opinion that it is not subject to the law of centrifugal force, and they contend that the scale is absolutelv even. The magnet revolves freely on ball bearings and is not connected with the indicating dial. The latter is suspended in front of the magnet, and a partition separates them, which is said to preclude the possibility of air affecting it. The dial is mounted on a pivot, of which the ends ride in sapphire bearings. A hair spring holds the dial to zero point, and the magnet, when revolving, has a tendency to draw the dial in the direction of its revolution, while the hair spring opposes its tendency. The greater rapidity of the magnet's revolution, the greater the displacement of the dial, and when the speed of the magnet doubles, the displacement is doubled. The length of the dial is practically six inches, which is large for the size of the instrument. The worm driven by the same shaft that drives the magnet operates the worm gear, which is connected directly to the odometer. Mounted on the dashboard, it can be tilted to any angle to accommodate the vision of the motorist, and thus it is possible for him to determine the distance covered at any stage of the journey.

Another speed indicator not wholly new is the one manufactured by the Webb Co., who have their factory in Newark, N. J. It is constructed with a taper bore and a long, thin aluminum wire called a "flyer." There is also a blower, which is a combination of two gear wheels, and is similar in principle to the water circulation pump which feeds the radiator of the water cooled automobile. As the speed of the car becomes greater or less, the size of an opening and the height of the flyer vary accordingly. The diameter of the flyer is exactly .500 inch. Its weight is five and one-quarter grains. There are three different types, varying from 40 to 100 miles.

The McGiehan dashboard odometers, made by the McGiehan Odometer & Mfg. Co., New York, had an interesting exhibit of their Models A and B. For speed indicating, the company suggests timing the passing miles by watch. The Veeder Tachometer, or speed indicator, manufactured by Veeder Mfg. Co., Hartford, Conn., attracted attention. It registers somewhat on the order of a thermometer, a red fluid marking on the glass the speed of the car. The Jones Speedodometer is actuated by a flexible shaft and gear drive on the front wheel. There are two sizes of this instrument made with indicating dials, three and four inches in diameter.

The Chicago Pneumatic Tool Co. showed an interesting speed-odometer of the dashboard type. Like the weather chart, the speed indicator records on paper the different speeds of the journey by means of a needle and a reel of paper inside the indicator, thereby creating a permanent record of the entire trip.

The R. & C. Indicator Co., Bridgeport, Conn., are exhibiting their gasolene gauge applied to the filling opening of the gasolene tank, and by which the quantity of gasolene in the tank is marked. The indicating point is actuated by a permanent magnet, which is incased in a brass tube depending from the indicator top to the bottom of the tank.

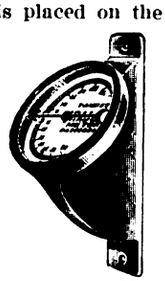
Many of the jacks shown were similar in type and mention is hardly necessary, as it would only mean a general repetition with the name of a different manufacturer. The Wray Pump & Register Co. exhibited a good automobile jack, which works by means of a pump, very much the same idea as used in inflating tires. The car is lowered by opening a small valve. This is undoubtedly one of the foremost jacks on the market. The Duff Mfg. Co., of Pittsburg, Pa., demonstrated what they term a Barrett jack. It raises on the downward movement of the lever only, supposedly an improvement over the double acting jack.

The improved equalizing gear shown by the Brown-Lipe Gear Co. is interesting. By an addition of six pinions, making twelve in all, the capacity is doubled without increasing the size and making it very little heavier.

Charles E. Miller, New York, shows an almost endless variety of supplies for the needs of an automobilist, and among his latest novelties is the Manometer, which is a pressure gauge for indicating the pressure of the cooling water on gasolene cars. It is intended to be connected to the return pipe from the cylinder jacket to the radiator coil. The necessity of maintaining good circulation is important. This Manometer has a flange with screw holes on the back of the case, permitting it to be screwed to the dashboard, and the rigid method of fastening secures correct registering.

WILLIS'S THREE NOVELTIES.

There were three distinct novelties displayed on the stand of E. J. Willis & Co., New York. The first and perhaps the most recent of these innovations is the Grade-Meter, which is placed on the dashboard in



Willis's Grade-Meter.

full view of the driver, who can immediately discern the grade of the hill the car is climbing. It is an ingenious employment of gears, glycerine and a balance weight, and is so simply, yet perfectly, constructed that it indicates the grade exactly without any vibration of the indicating hand while the automobile is in motion. The dial is at an angle and the figures are large enough to be read from the seat. Willis also shows a new muffler, called the Automatic Yankee Silent Muffler, composed of 24 opposed spring discs on the end of the exhaust pipe. At 12 regular intervals the exhaust pipe is bored with several small holes opening into the chamber. The gas passes into the 12 radiators at the same time and escapes from around the outer edges of these discs in a thin stream. This form of muffler has been found to be noiseless, and as the outlet point of escape is so much larger than the bore of the exhaust pipe, there is no back pressure. The discs free themselves of all soot and foreign matter by the force of gravitation accelerated by the force of exploding gases. The Yankee Non-Vibrating Steering Wheel is another Willis novelty. It has a flexible rubber disc in the centre, and the spokes are much shorter than in the ordinary run of wheels. The fact of having a rubber diaphragm lessens the jar on the wrists and does not detract from the power or strength of the steering gear.

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HORNS OF ALL SORTS.

What looks extremely like an organ pipe is the new Gabriel Horn, the invention of C. H. Foster, and manufactured by the Gabriel Horn Manufacturing Co., of Cleveland, O. The feature of the new invention is the musical note it makes, and the fact of it being operated from the exhaust, blowing a full blast with less than one pound pressure. The horn can be placed on the bonnet of the car or underneath the body. On gasolene engines that have a specially light exhaust a valve is placed on the exhaust pipe, which is manipulated by the cord that blows the horn, opening the pipe to the horn and closing the end leading out, causing all the exhaust required to pass through the horn. It has no reed and is said to be unaffected by water or oil. More of these horns are in course of construction with three pipes, instead of



Gabriel's Horn.

two. Another idea of musical horn is shown in the exhibit of A. H. Funke, New York. His specialty is a double horn, operated by the usual bulb, which gives out a double note, probably not the perfection of harmony, yet it should be very effective in its purpose. Funke has also on exhibition a triple auxiliary horn, with stops on it similar to a cornet and blown after the same manner. It is supposed to be used in the event of an emergency, and a bugle call could easily be blown on it to warn pedestrians. Not altogether a new design is the Dragon horn, exhibited by both Charles E. Miller and the Post & Lester Co. It has a large mouth, but for the purpose of avoiding the wind and dust, a wire shield is provided which lessens the size of the opening, but does not diminish the sound. The double turn in this horn gives a deep bass stentorian sound and should be appreciated by those enjoying the pleasure of a long tour, as it can be heard from afar. In connection with the exhibition of horns, a foot blower is shown, made by the Pneumatic Tire Protector Co., Dayton, O. It is attached to the side of the machine, where it does not interfere with the other pedals, and a slight pressure of the foot will blow the horn.

R. E. Hardy & Co., New York, are showing the Dome gasolene outfits. One feature of their pump is worthy of notice. On top of the gasolene pump is a glass dome shaped device, and all the gasolene going into the tank first passes through the glass, and the quantity and impurities can be immediately detected. One movement of the pump handle empties the gasolene, and it remains in the glass bowl on the pump. A downward movement of the handle returns the gasolene to the storage tank. For filling the automobile tank a faucet is placed on the pump, and the exact quantity can very easily be regulated.

Single glass goggles are becoming quite the rage, and to meet the fastidious tastes of many E. B. Meyrowitz, New York, is exhibiting curved glass goggles, which are made in one piece, permitting thus to look in any direction without actually bending the head. They are comfortable, and a plush lining prevents them chafing the skin. The fact of there being no dark space in the middle keeps the view much clearer, and also they do not depend on the nose for support. The Motor Car Equipment Co., New York, have some collapsible goggles and the new feature is having them folding as well as collapsible, so that they can be placed in a small pocket.

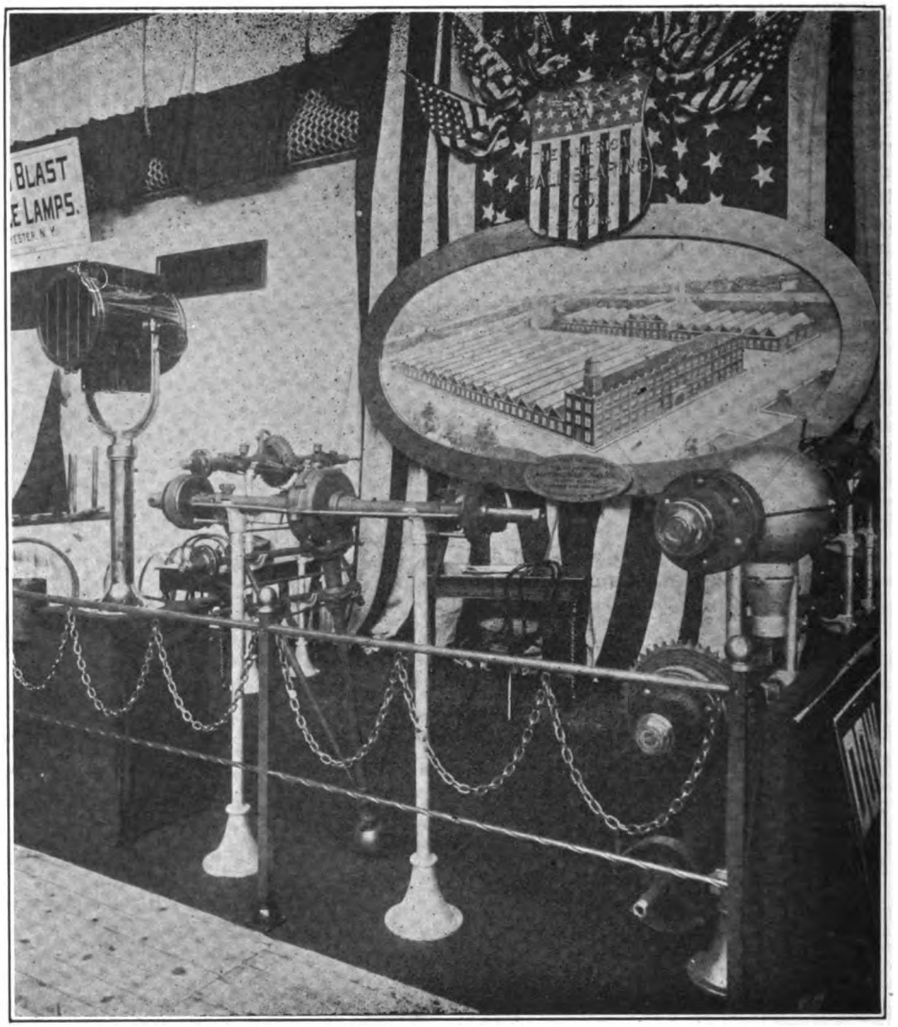


EXHIBIT OF AMERICAN BALL BEARING CO.

Summary of Cars Exhibited.

Duryea Power Co., Reading, Pa.—Duryea cars; one three seated family phaeton, gasolene, three cylinders.

Phelps Motor Vehicle Co., Stoneham, Mass.—Phelps gasolene cars; one three cylinder car; one chassis.

Apperson Bros.' Automobile Co., Kokomo, Ind.—Apperson gasolene cars; one four cylinder car; one chassis.

Winton Motor Carriage Co., Cleveland, Ohio—Winton gasolene cars; two touring cars and one limousine, four cylinders; one chassis.

Knox Automobile Co., Springfield, Mass.—Knox gasolene cars, four; three two cylinder cars, one single cylinder car; one chassis.

Thomas Motor Co., E. R., Buffalo, N. Y.—Thomas gasolene cars; three four cylinder cars; one chassis.

Royal Motor Car Co., Cleveland, Ohio—Royal Tourist gasolene cars; two four cylinder cars.

American Motor Co., Brockton, Mass.—Marsh gasolene car; one two cylinder runabout.

Springer Motor Vehicle Co., New York City—Springer gasolene cars; one four cylinder touring car and one two cylinder delivery wagon.

Daimler Mfg. Co., Long Island City, N. Y.—American Mercedes gasolene cars; one chassis, four cylinders; one body.

Vehicle Equipment Co., New York City—Nine cars, all electric; four heavy trucks, three delivery wagons, one Victoria and one cab.

Lane Motor Vehicle Co., Poughkeepsie, N. Y.—Lane steam cars; one car and one chassis.

Covert Motor Vehicle Co., Lockport, N. Y.—Covert gasolene cars; one four cylinder car, one single cylinder car.

Packard Motor Car Co., Detroit, Mich.—Packard gasolene cars, two four cylinder cars; one chassis.

National Motor Vehicle Co., Indianapolis,

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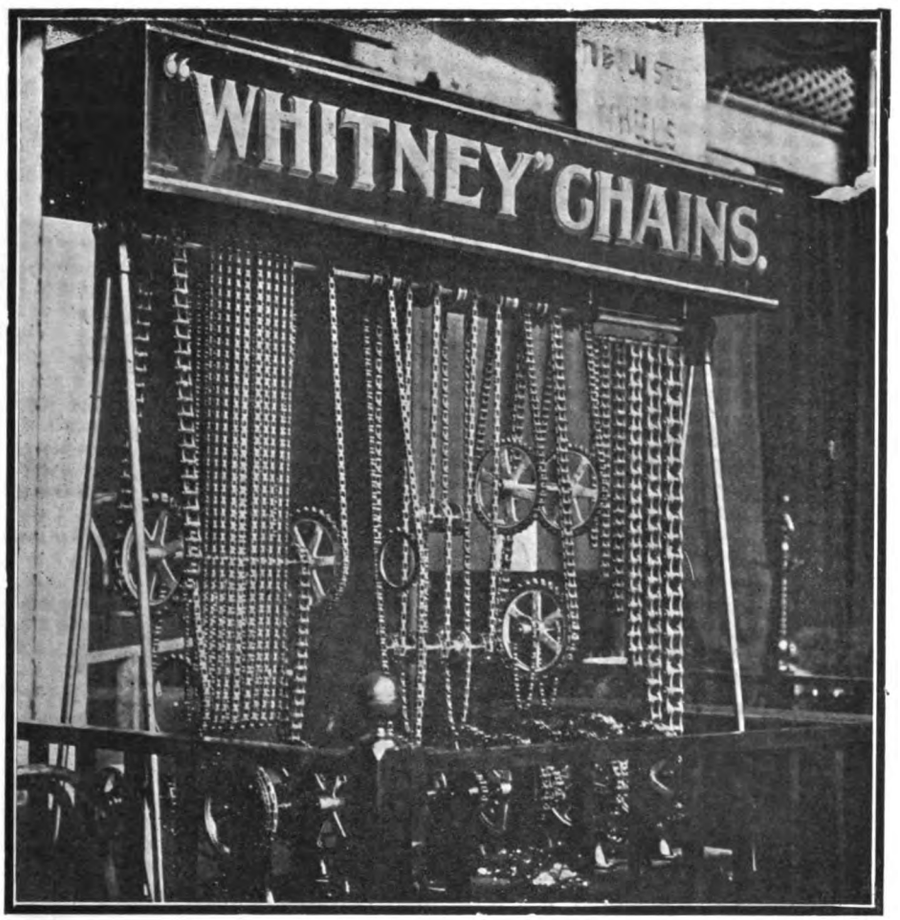


EXHIBIT OF WHITNEY MFG CO.

Ind.—National cars, gasolene and electric; three cars, one gasolene, four cylinders; two electrics; one chassis.

Studebaker Automobile Co., South Bend, Ind.—Studebaker cars, gasolene and electric; seven cars, two gasolene, one four cylinder and one two cylinder; five electrics; one chassis.

Smith and Mabley Mfg. Co., New York City—Simplex gasolene cars; two four cylinder cars; one chassis.

Prescott Automobile Mfg. Co., New York City—Prescott steam cars; one steam car.

Stevens Arms & Tools Co., Chicopee Falls, Mass.—Stevens-Duryea gasolene cars; two cars, one four cylinders, one two cylinders; one chassis.

Elmore Mfg. Co., Clyde, Ohio—Elmore Pathfinder cars, gasolene; two cars, one single cylinder, one two cylinder.

Standard Motor Construction Co., Jersey City—Standard Gasolene cars; two four cylinder cars.

Pope Mfg. Co., New York City—Pope-Toledo, Pope-Hartford, Pope-Tribune gasolene cars and Pope-Waverly electric cars; two single cylinder cars, two two cylinder cars, four four cylinder cars and four electrics.

Olds Motor Works, Detroit, Mich.—Olds cars, gasolene; four single cylinder cars and two two cylinder cars.

Locomobile Co. of America, Bridgeport, Conn.—Locomobile gasolene and steam cars; six four cylinder cars; one chassis.

Haynes-Apperson Co., Kokomo, Ind.—Haynes gasolene cars; one four cylinder car and two two cylinder cars.

Mitchell Motor Car Co., Racine, Wis.—Mitchell cars, gasolene; one two cylinder car, one four cylinder car.

Worthington Automobile Co., New York City—Meteor gasolene cars; six four cylinder cars.

Kirk Mfg. Co., Toledo, Ohio—Yale gasolene cars; one two cylinder car and one four cylinder car.

Baker Motor Vehicle Co., Cleveland, Ohio—Baker electric cars; one 'bus, two Stanhopes, one delivery wagon and one two seat carriage.

White Sewing Machine Co., Cleveland, Ohio—White steam cars; two cars.

Stearns Co., Cleveland, Ohio—Stearns gasolene car; one four cylinder car; one chassis.

Northern Mfg. Co., Detroit, Mich.—Northern gasolene car; one single cylinder car, one two cylinder car, one chassis.

Autocar Co., Ardmore, Pa.—Autocars, gasolene; one four cylinder car, two two cylinder cars, one chassis.

Electric Vehicle Co., Hartford, Conn.—Columbia electric and gasolene cars; four four cylinder cars, one two cylinder car, six electric cars, two chasses.

Waltham Mfg. Co., Waltham, Mass.—Orient gasolene cars; two single cylinder cars, two four cylinder cars, one chassis.

Pierce Co., The Geo. N., Buffalo, N. Y.—Pierce Great Arrow and Pierce Stanhope, gasolene; three four cylinder cars, one single cylinder car, one chassis.

Matheson Motor Car Co., Holyoke, Mass.—Gasolene cars; one four cylinder car, one chassis.

Cadillac Automobile Co., Detroit, Mich.—Cadillac gasolene cars; one four cylinder car, three single cylinder cars, one chassis.

Lozier Motor Co., New York City—Lozier gasolene car; one four cylinder car.

Corbin Motor Vehicle Corporation, New Britain, Conn.—Corbin gasolene cars; two four cylinder cars.

Ford Motor Co., Detroit, Mich.—Ford gasolene cars; two two cylinder cars, one four cylinder car, one chassis.

Reliance Motor Car Co., Detroit, Mich.—Reliance gasolene cars; one two cylinder car.

Peerless Motor Car Co., Cleveland, Ohio—Peerless gasolene cars; three four cylinder cars.

Jeffrey & Co., Thos. B., Kenosha, Wis.—Rambler gasolene cars; three two cylinder cars.

Grout Bros.' Automobile Co., Orange, Mass.—Grout steam car; one car, one chassis.

Commercial Motor Co., New York City—Walter gasolene cars; one four cylinder car, one chassis.

Buick Motor Car Co., Jackson, Mich.—Buick gasolene car; one two cylinder car.

Reo Motor Car Co., Lansing, Mich.—Reo gasolene cars; one single cylinder car, one two cylinder car, one chassis.

Blonstrom Motor Car Co., C. H., Detroit, Mich.—Queen gasolene cars; two two cylinder cars, one chassis.

Buffum Co., H. H., Abington, Mass.—Gasolene cars; two four cylinder cars.

Maxwell-Briscoe Co., Tarrytown, N. Y.—Maxwell gasolene cars; three two cylinder cars, one chassis.

Wayne Automobile Co., Detroit, Mich.—Wayne gasolene cars; one two cylinder car, one four cylinder car.

Worthington Automobile Co., New York City—Three four cylinder Reo-Bollee gasolene cars (imported).

Premier Motor Mfg. Co., Indianapolis, Ind.—Premier gasolene cars; three four cylinder cars.

Panhard & LeVassor Automobile Co., New York City—Panhard gasolene cars; four four cylinder cars.

De Dietrich & Co., New York City—Four four cylinder cars, De Dietrich gasolene cars.

Palais de l'Automobile, New York City—Gasolene cars; two four cylinder Renault cars, three four cylinder Panhard cars.

Welch Motor Car Co., Detroit and Pontiac, Mich.—Welch gasolene cars; one four cylinder car, one chassis.

St. Louis Motor Carriage Co., St. Louis, Mo.—St. Louis gasolene cars; two single cylinder cars.

Gas Engine & Power Co. & Chas. L. Seabury Co., Consolidated, Morris Heights, N. Y.—Speedway gasolene cars; one four cylinder chassis.

Michigan Automobile Co., Kalamazoo,

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Mich.—Michigan gasolene cars; two two cylinder cars, one chassis.

Marion Motor Car Co., Indianapolis, Ind.—Marion gasolene cars; one four cylinder car.

Cleveland Motor Car Co., Cleveland, Ohio—Cleveland gasolene car; one four cylinder car, one chassis.

Acme Motor Car Co., Reading, Pa.—Acme gasolene cars; one two cylinder runabout, one four cylinder touring car, one two cylinder opera 'bus.

Bartholemew Co., Peoria, Ill.—The Glide gasolene cars; two single cylinder cars.

Ardsley Motor Car Co., Yonkers, N. Y.—Ardsley gasolene cars; one four cylinder gasolene car, one chassis.

Mack Bros.' Motor Car Co., Brooklyn, N. Y.—Manhattan transportation gasolene cars; one four cylinder passenger car.

Jackson Automobile Co., Jackson, Mich.—Jackson gasolene car; one two cylinder car, one chassis.

Austin Automobile Co., Grand Rapids, Mich.—Austin gasolene cars; one four cylinder car, one chassis.

Pierce Engine Co., Racine, Wis.—Pierce Racine gasolene cars; one single cylinder car, one two cylinder car.

Oscar Lear Automobile Co., Columbus, Ohio—The Frayer-Miller gasolene car; one four cylinder gasolene car, one chassis.

Knox Automobile Co., Springfield, Mass.—Knox Waterless cars; one single cylinder car, two two cylinder cars.

Napier Motor Co., of America, Boston, Mass.—Napier gasolene cars; two six cylinder cars, one chassis.

Coldwell Lawn Mower Co., Newburgh, N. Y.—One gasolene lawn mower.

American Motor Sleigh Co., Boston, Mass.—One motor sleigh.

Reid Mfg. Co., Detroit, Mich.—Wolverine gasolene car; one two cylinder car, one chassis.

Logan Construction Co., Chillicothe, Ohio—Logan gasolene cars; one two cylinder car.

Black Diamond Automobile Co., Utica, N. Y.—Buckmobile gasolene cars; two two cylinder cars, one chassis.

Dolson & Sons, John L., Charlotte, Mich.—Dolson gasolene cars; one two cylinder car.

Buick Motor Co., Jackson, Mich.—Buick gasolene cars; one two cylinder car, one chassis.

Upton Motor Co., Lebanon, Pa.—Upton gasolene cars; one four cylinder car.

Union Automobile Co., Oakdale, Mass.—Union gasolene cars; one two cylinder car, one chassis.

E. H. V. Co., Middletown, Conn.—Compound gasolene cars; one three cylinder car, one chassis.

Crest Mfg. Co., Cambridge, Mass.—Crestmobile gasolene cars; one single cylinder car.

Browne Machine Co., James, Pawtucket, R. I.—Cameron gasolene cars; one single cylinder car, one three cylinder car.

Pungs-Finch Automobile & Gas Engine Co., Detroit, Mich.—Pungs-Finch gasolene cars; one four-cylinder car; one chassis.

Franklin Mfg. Co., Syracuse, N. Y.—Franklin gasolene cars; three four-cylinder cars.

Model Gas Engine Works, Auburn, Ind.—Model gasolene cars; one two cylinder car; one four cylinder car.

Summary of Accessory Exhibits.

American Roller Bearing Co., South Framingham, Mass.—American roller bearings.

American Barr Bearing Co., The, Cleveland, Ohio—Ball bearing axles, wheels, etc.

American Coil Co., West Somerville, Mass.—Coils.

Auto Supply Co., New York City—Supplies.

America Co., Inc., Rockford, Ill.—Specialties.

Autocoil Co., Jersey City, N. J.—Coils.

Aurora Automatic Machinery Co., Aurora, Ill.—Thor motorcycles and fittings.

Allers & Co., H. A., New York City—Specialties.

American Lubricator Co., Detroit, Mich.—Century lubricators.

Angiulli, Luigi, New York City—Lamps.

American Electrical Novelty & Mfg. Co., New York City—Electrical goods.

Baldwin Chain & Mfg. Co., Worcester, Mass.—Baldwin detachable and riveted chains.

Brown-Lipe Gear Co., Syracuse, N. Y.—Gears.

Briscoe Mfg. Co., Detroit, Mich.—Radiators and fenders.

Brennan Motor Co., Syracuse, N. Y.—Brennan gasolene motors.

Badger Brass Mfg. Co., Kenosha, Wis.—Solar acetylene gas lamps.

Baker & Thatcher, Attleboro, Mass.—Puncture preventors.

Breeze Motor Co., Newark, N. J.—Motorcycles and carburetters.

Brown, Wm. H., Chicago, Ill.—Dust shield.

Byrne-Kingston & Co., Kokomo, Ind.—Carburetters.

Bowser & Co., Inc., S. F., Fort Wayne, Ind.—Gasolene outfits.

Brown & Sharpe Mfg. Co., Providence, R. I.—Gears.

Bridgeport Deoxidized Bronze & Metal Co., Bridgeport, Conn.—Castings.

Chicago Pneumatic Tool Co., Chicago, Ill.—Little Giant pneumatic drills.

Columbia Lubricant Co. of New York, New York City—Lubricants and polishes.

Cooper, Dr. T. J., Paterson, N. J.—Tires.

Continental Caoutchouc Co., The, New York City—Tires.

Cramp & Sons' Ship & Engine Bldg. Co., Wm., Philadelphia, Pa.—Castings.

Carbondale Chemical Co., New York City—Lubricants.

Coldwell Lawn Mower Co., The, Newburgh, N. Y.—Motor lawn mowers.

Central Automobile Exchange, Providence, R. I.—Specialties.

G. H. Curtis Mfg. Co., Hammondsport, N. Y.—Motorcycles.

Concentrated Acetylene Co., Indianapolis, Ind.—Acetylene gas and gas tanks.

Cleveland Car Specialty Co., Cleveland, Ohio—Pressed steel frames.

Consolidated Mfg. Co., Toledo, Ohio—Yale Motorcycles.

Carlyle-Johnson Machine Co., Hartford, Conn.—Gears and clutches.

Cook's Sons, Adam, New York City—Grease.

Custead, W. D., New York City—Specialties.

Calculograph Co., New York City—Time recorder.

Constant Dynamo Co., Boston, Mass.—Dynamos.

Dietz, Co., R. E., New York City—Lamps.

Diamond Rubber Co., Akron, Ohio—Diamond detachable clincher tires.

Dow Portable Electric Co., Braintree, Mass.—Spark coils.

Dayton Electrical Mfg. Co., Dayton, Ohio—Apple dynamos.

Demmerle & Co., New York City—Clothing.

Duane & Co., W. J., New York City—Specialties.

Detroit Steel Products Co., Detroit, Mich.—Automobile springs.

Duff Mfg. Co., Allegheny, Pa.—Auto jacks.

Electric Contract Co., New York City—Electrical goods.

English & Mersick Co., New Haven, Conn.—Locks, lamps and other metal specialties.

Edison Storage Battery Co., Glen Ridge, N.—Storage batteries.

Firestone Tire & Rubber Co., Akron, Ohio—Solid tires.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk mechanically fastened tires.

Funke, A. H., New York City—Lamps, horns, supplies, etc.

Federal Mfg. Co., Elyria, Ohio—Frames, axles, gears, etc.

Gilbert Mfg. Co., New York—Waterproof cases for cars and lamps.

Gray & Davis, Amesbury, Mass.—Headlight, side and tail oil and acetylene gas lamps.

Goodyear Tire & Rubber Co., The, Akron, Ohio—Goodyear detachable clincher tires.

Gunther's Sons, C. G., New York—Fur coats.

Gleason-Peters Air Pump Co., New York City—Pumps.

Goodrich Co., B. F., Akron, Ohio—Goodrich detachable clincher tires.

G & J Tire Co., Indianapolis, Ind.—G & J detachable clincher tires.

Ham Mfg. Co., C. T., Rochester, N. Y.—Oil lamps.

Hartford Rubber Works Co., Hartford, Conn.—Perfected Dunlop detachable and Hartford and Turner tires.

Hartford Suspension Co., The, New York City—Shock absorber.

Hardy Co., R. E., New York City—Starite spark plugs.

Hess-Bright Mfg. Co., The, Philadelphia, Pa.—Ball bearings.

Hine-Watt Mfg. Co., Chicago, Ill.—Lamps.

Hyatt Roller Bearing Co., Harrison, N. J.—Bearings.

Hussey Drop Forge & Mfg. Co., Cleveland, Ohio—Fittings and supplies.

Hjort & Co., Wm., Jamestown, N. Y.—Wrenches.

Hendee Mfg. Co., Springfield, Mass.—Indian motorcycles.

Herz & Co., New York City—Spark plugs, etc.

International Automobile & Vehicle Tire Co., New York City—Tires.

(Continued on page 776)

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The Week's Patents.

778,821. Connecting Rod. James F. Duryea, Springfield, Mass. Filed March 27, 1900. Renewed May 12, 1904. Serial No. 207,695.

Claim.—1. A connecting rod having at its end a cup-shaped socket, interiorly threaded at its mouth and a longitudinal slot in the wall of the socket which extends to the mouth thereof, a threaded plug screwed in the socket and a lock-nut threaded to the plug and having a projecting rim which engages the mouth of the socket to secure it against spreading, in combination with a ball and supporting arm therefor, substantially as described.

778,894. Process of Making Spongy Lead for Secondary Battery Electrodes. Charles J. Reed, Philadelphia, Pa., assignor to Security Investment Company, a Corporation of Pennsylvania. Filed May 7, 1903. Serial No. 156,094.

Claim.—1. The process of forming spongy or finely-divided lead for second battery electrodes, which consists in mixing one or more compounds of lead with finely-divided metallic zinc, then subjecting such mixture to a liquid which will convert the lead compound into metallic lead and the zinc into a soluble zinc salt, and lastly washing out the zinc salt.

778,988. Carburetter. Francis L. Merritt, Shepherds Bush, England. Filed November 8, 1904. Serial No. 231,866.

Claim.—1. In a carburetter, the combination with a chamber having a valve-controlled air inlet, an oil admission inlet communicating with said chamber, a cone-shaped valve controlling the admission of oil into said chamber, and a deflector located in said chamber and surrounding said valve with its upper end open and terminating in a depending cone and effective to deflect the incoming air so as to assist in the atomizing of the oil.

779,034. Means for Fastening Tires to Wheel Rims. Charles G. Fawkes, Denver, Colo. Filed January 15, 1904. Serial No. 189,213.

Claim.—1. In means for fastening rims to tires, the combination of a shoe adapted to be inserted in the tire and engaging the inner surface of the inner periphery thereof, and suitable means connected with the said shoe for fastening the rim to the tire, comprising a part having a threaded connection with the shoe, said part being provided with a flange adapted to engage the outer surface of the inner periphery of the tire.

779,111. Brake. Frank H. Ball, Plainfield, N. J. Filed June 29, 1903. Serial No. 163,609.

Claim.—1. In a brake the combination of a friction wheel; a split band on said wheel; means for holding either end of said band against the action of the wheel, and for permitting a movement of the free end of the band, a lever connected to one end of the band, and a link connecting the lever with the opposite end of the band.

779,120. Motor-Vehicle. Louis S. Flatau, St. Louis, Mo. Filed December 23, 1903. Serial No. 186,318.

Claim.—1. In a motor-vehicle, a driven axle having independently movable spindles bearing wheels, with their bearings axially pivoted in position, arms fixed to said bearings, a pilot bar pivotally connected to said arms, a manually-actuated shaft having an arm controlling the movement of said pilot-bar, a second shaft, and reversing mechanism connected up with said second shaft.

779,207. Sparking Igniter for Internal-Combustion Engines. Henry Devlin, Philadelphia, Pa. Filed November 4, 1903. Serial No. 179,760.

Claim.—1. In an internal-combustion engine an igniter comprising a reciprocating rod; a slide-block running on the rod; a fixed electrode projecting within the combustion-chamber; a rock-shaft also projecting within the combustion-chamber; a moving electrode on the rock-shaft within the combustion-chamber; an arm pivoted to the slide-block and fast to the rock-shaft whereby movement of the slide-block along the rod rocks the shaft, and thereby makes and breaks the electric circuit; a trigger-arm pivoted to the reciprocating rod which, when moving in one direction, advances the slide-block until contact of the electrodes is effected; means for thereafter tripping said trigger so as to free the slide-block from it; and a spring whereby the slide-block is upon such release driven in the opposite direction and the electrodes separated, substantially as described.

779,216. Starting Mechanism for Engines

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order

In capitals, 25 cents per line.

1902 Winton Touring Car, 5 passenger, 20 horse power, double sparking device: guaranteed to run 30 miles an hour. HOWARD CYCLE CO., Trenton, N. J.

FOR SALE—Delivery Top to fit A Model Cadillac, or will trade for Tonneau of same size. L. M. JOHNSTON, Dayton, O.

1904 Tonneau Auto Car, canopy top and headlights; run less than 500 miles; A1 condition; $1,100. ARTHUR McNALL, 67 South ave., Rochester N. Y.

A MORE UNIFORM MIXTURE can be obtained by the use of our automatic air governor when applied to the Oldsmobile mixer. This means more power and speed. Easily attached. Not necessary to remove mixer. Sent upon receipt of price. $2.50. Circular upon application.
MORE-POWER CO., Box 175, Lowell, Mass

FOR SALE—Winton quad. In best condition, with four hundred dollars worth of extras on it. Very best reason for selling. It will pay you to investigate, if you are comtemplating buying an automobile at a bargain. Address, Room 403, First National Bank Building, Danville, Ill.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

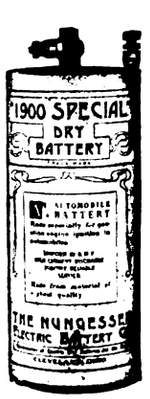
WANTED—Fifteen to twenty traveling salesmen by a well-known and established tire manufacturing company, making standard goods. Only active men who know how to work effectively and all the time need apply. Exceptional opportunity for men of the right sort. Address, TIRES, P. O. Box 649, New York.

THE WISE MAN PROFITS BY THE EXPERIENCE OF OTHERS.

Experienced people say that the

"1900 SPECIAL" DRY BATTERY

Is unexcelled in all the qualities that characterize a strong, up to date Dry Battery for ignition.



2½x6 in. high.

MANUFACTURED BY

The Nungesser Electric Battery Co., Cleveland, Ohio.

General Sales Office, 128 Jackson Boulevard, - - Chicago.

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or Motors. Wilhelm Hagspiel, Ludwigsburg, Germany. Filed November 6, 1903. Serial No. 180,076.

Claim.—1. In a starting mechanism for engines, the combination of a shaft, a starting element for said shaft normally ineffective, a hand lever having a sleeve for moving the starting element into its effective position, means for preventing relative motion of the said lever and shaft starting element when the former is manipulated, said shaft having means serving to automatically return the starting element to its normal ineffective position on the initial motion of the shaft, a clutch wheel surrounding the shaft and means carried by the starting element and engaging the said wheel for locking the starting element and hand lever to an ineffective position when the shaft rotates in a reverse direction.

779,231. Induction Coil. John G. Meyers, East Providence, R. I., assignor to Varley Duplex Magnet Company, Phillipsdale, R. I., a corporation of New Jersey. Filed August 4, 1904. Serial No. 219,542.

Claim.—1. An induction coil embodying a primary winding divided into sections connected in series, and an electrical controlling device connected in the primary circuit between said sections.

779,256. Speed Regulator for Explosive Engines. Alfred Bougault, Paris, France, assignor to The Societe Francaise de Constructions Mecaniques (Anciens Etablissements Cail), Paris, France. Filed September 21, 1903. Serial No. 174,122.

Claim.—1. A speed-regulator for explosive engines, having an inlet valve, a mixing chamber provided with ports for the entrance of gas and air in predetermined proportions, the discharge of the mixture from said chamber being caused by the opening of said inlet valve, a distributing valve arranged to simultaneously close said air and gas ports, mechanism for opeping the two valves, the distributing valve, when opened, serving to simultaneously uncover said ports, and governor-controlled means for causing the closure by said distributing valve of said ports on each stroke of the engine, said distributing valve being operable independently of the inlet valve on its closing movement.

779,302. Vehicle. Lionel Norman, Brookline, Mass. Filed May 20, 1904. Serial No. 208,819.

Claim.—1. A sleigh, having, in combination, runners, power mechanism carried thereby, propelling means engaging the road surface and actuated by the power mechanism and means for reversing the operation of the propelling means so that the sleigh may be driven either forward or backward.

779,303. Sleigh. Lionel Norman, Brookline, Mass. Filed June 11, 1904. Serial No. 212,100.

Claim—1. A sleigh, having, in combination a pusher engaging the road surface, means for reciprocating the pusher, and means for raising the pusher during alternate strokes, acting to render either the backward strokes or the forward strokes of the pusher inoperative at the will of the operator, according as the sleigh is to be driven forward or backward.

779,335. Wheel Tire. Alfred J. White, Akron, Ohio. Filed May 10, 1904. Serial No. 207,288.

Claim—1. In a wheel the combination with the felly having a flat face, of a metallic rim fitted thereto and having an inwardly extending flange lying flush with the side of the felly, the tire having the flanged base portions, an annular plate secured to one side of the felly having an inturned end, or flange, engaging the flanged base of the tire, an annular plate secured to the flange of the rim, but capable of longitudinal movement thereon, and having an inturned flange engaging the flanged base of the tire, and means for fastening said movable plate, substantially as described.

779,351. Driving Gear for Motor Vehicles. William H. Douglas, Belleville, N. J., assignor to Healey & Co., New York, N. Y., a corporation of New York. Filed February 20, 1904. Serial No. 194,522.

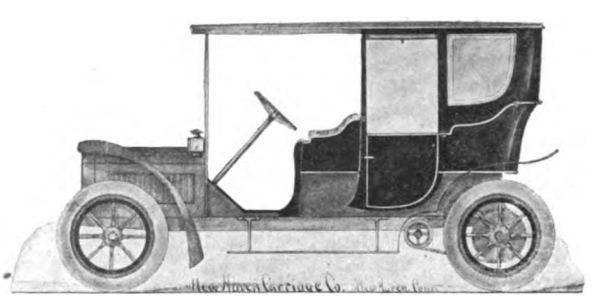
Claim—1. In a motor vehicle, the combination with an axle having pivoted stub axles, and wheels journalled on the stub axles, of an internal gear wheel on each wheel, a pinion in mesh with the gear wheel, a motor mounted on the said axle, and a universal joint between the shaft of the motor and the shaft of the said pinion, as set forth.

779,418. Motor Vehicle. Charles E. Foster, Washington, D. C. Filed July 5, 1902. Serial No. 114,492.

Claim—1. The combination with the body, seat and platform of a motor vehicle, of a casing forward of the platform, a boiler arranged within the casing, a burner below the boiler, and devices for controlling the supply of burning mixture accessible from above the platform, substantially as set forth.

"Motorcycles: How to Manage Them." Price $1. The Goodman Company, 154 Nassau Street, New York.

Automobile Buyers



Desiring really luxurious Tonneaus, Limousines or Landaulets that will be very durable, ride easy, finely painted, having the same attention paid to details they received in their fine horse drawn Broughams and Victorias, can obtain same from the **first** firm in America to build **Automobile Bodies.**

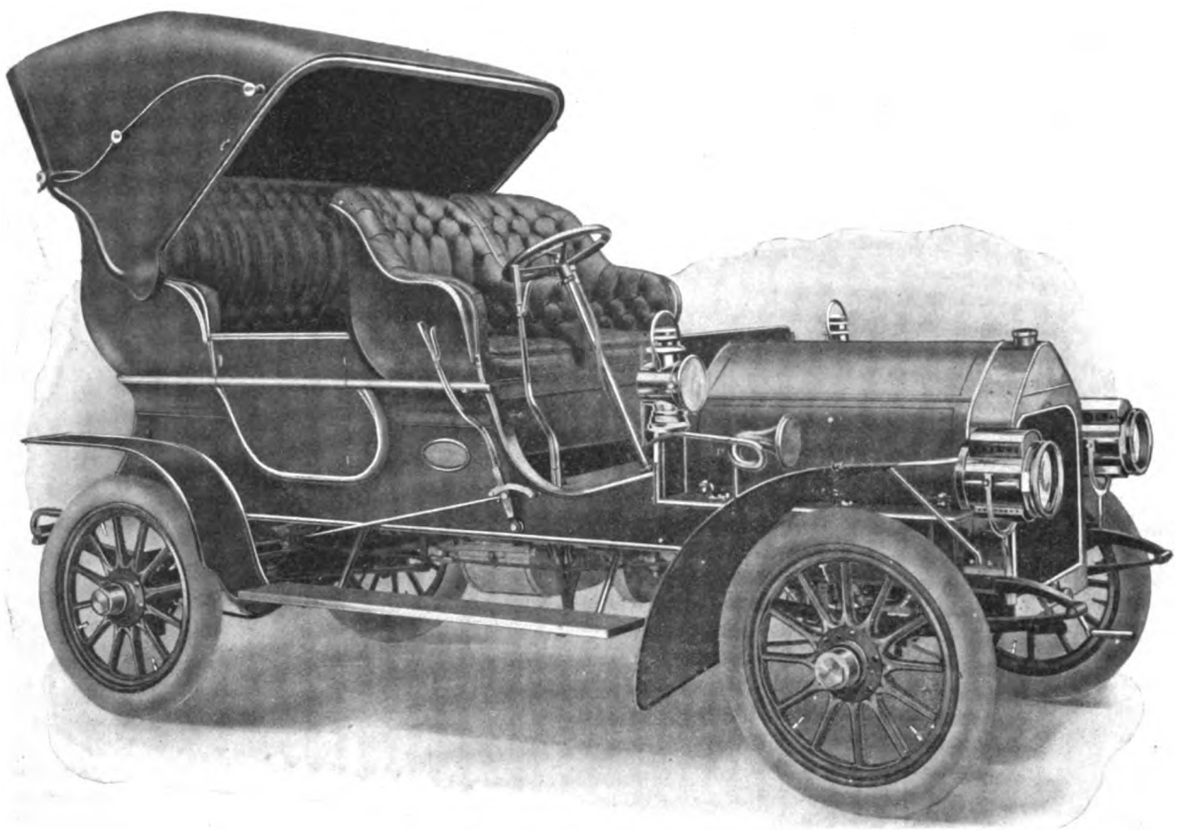
THE NEW HAVEN CARRIAGE CO., New Haven, Conn.

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AT THE SHOW

THE HAYNES

AS EVER, WAS A HIT.



30 H. P. $3000.

Four-cylinder vertical motors, roller gear, shaft drive (direct on high gear), five-passenger double side entrance tonneau, and Haynes Standard of Construction throughout.

This, the latest and greatest offering of the Oldest Motor Car Makers in America, shows more real and substantial improvement than any 1905 four-cylinder car on the market.

Interesting descriptive matter on application.

THE HAYNES-APPERSON CO., - Kokomo, Ind.

1715 Broadway, New York. **1420 Michigan Avenue, Chicago.**

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Summary of Accessory Exhibits.

(Continued from page 772)

Imperial Wheel Co., Flint, Mich.—Artillery wheels.

Iron Clad Mfg. Co., Brooklyn, N. Y.—Gasolene hooped tanks.

Jones, Joseph W., New York City—Speedometers.

Jones & Co., Phineas, Newark, N. J.—Wooden wheels.

Jersey Brake Co., The, Newark, N. J.—Brakes.

Kells Mfg. Co., W. J., Jersey City, N. J.—Radiators.

Klenal Mfg. Co., New York—Soaps.

Lehman, I., New York—Universal Bending joint.

Light Mfg. & Foundry Co., The, Pottstown, Pa.—Motorcycles and castings.

Lunkenheimer Co., The, New York City—Oilers and generator valves.

Livingstone, D. McRae, New York City—Specialties.

Lighthouse Co., New York—Signs.

Midgeley Mfg. Co., Columbus, Ohio—Midgeley pressed tubular steel wheels.

Morgan & Wright, Inc., Chicago, Ill.—Morgan & Wright clincher detachable tires.

Motor Car Equipment Co., The, New York City—Goggles, hoods, batteries and lamps.

Metz, Charles H., Waltham, Mass.—Motorcycles.

Miller, Charles E., New York City—Sundries and supplies.

Merkel Mfg. Co., Milwaukee, Wis.—Motors and motorcycles.

Motsinger Device Co., Pendlton, Ind., Space A, C. H.—Auto sparkers.

Miller, Chas. E., New York City, F. A., A.—Supplies, parts and sundries.

McGiehan Odometer & Mfg. Co., New York City, Space E, C. H.—Odometers.

Manufacturers' Foundry Co., The, Waterbury, Conn., Space C, C. H.—Cylinder and other castings.

Mesinger Mfg. Co., H. & F., New York City, Spaces 24 and 26, S. T. B.—Tire protectors.

McCord & Co., Chicago, Ill., and New York City—Oilers and Hibbard pump.

Myers & Alexander, New York City, Space 6, S. T. B.—Dust and waterproof hampers.

Meyrowitz Mfg. Co., New York City, Space 15, S. T. B.—Goggles.

Merrell-Stevens Mfg Co., Kalamazoo, Mich., Space 11, S. T. B.—Jacks.

Hilding, Nelson, Newark, N. J.—Coolers.

National Carbon Co., Cleveland, Ohio, Block U, E. P.—Columbia dry batteries.

New York & New Jersey Lubricant Co., New York City, Block U, E. P.—Lubricants.

Noera Mfg. Co., Waterbury, Conn.—Hand oilers.

New York Edison Co., New York City, Spaces 39 and 51, F. T. B.—Electrical specialties.

National Car Wheel Co., Rochester, N. Y., Space F, C. H.—Specialties.

New York Sporting Goods Co., New York City, Spaces 3 and 5, S. T. B.—Supplies.

Oliver Mfg. Co., Chicago, Ill., Space , C. H.—Jacks.

Ofeldt & Sons, F. W., Brooklyn, N. Y., Spaces 23 and 25—Trucks.

Patterson, Gottfried, & Hunter, New York—Tool equipment.

Parish & Bingham Co., Cleveland, Ohio, Block U, E. P.—Frames, parts and fittings.

Pittsfield Spark Coil Co., Pittsfield, Mass., Block X, E. P.—Spark coils.

Pneumatic Tire Protector Co., Dayton, Ohio, Space 9, U. B.—Tire protectors.

Post & Lester Co., The, Hartford, Conn., Spaces 39 and 42, U. B.—Sundries and supplies.

Pantasote Leather Co., New York—Leather for coverings and apparel.

Pennsylvania Rubber Co., Jeannette, Pa., Space C, C. H.—Tires.

Post Mfg. Co., New York City—Tire protectors.

Poly-Phase Ignition System Co., New York City, Space 1, S. T. B.—Electrical specialties.

Parker, Henry F., Newburgh, N. Y., Space 13, S. T. B.—Specialties.

Rushmore Dynamo Works, Plainfield, N. J., Spaces 7 and 8, U. B.—Searchlights and lamps.

Rose Mfg. Co., Philadelphia, Pa., Block Y, E. P.—Lamps.

Reliance Motor Cycle Co., Addison, N. Y., Space 15, U. B.—Motorcycles.

Roche, Wm., New York City, Space 30, U. B.—Autogas dry batteries, plugs, etc.

Rutter & Co., Arthur T., New York City, Space C, C. H.—Specialties.

Splitdorf, C. F., New York City, Block T, E. P.—Splitdorf spark coils.

Springfield Metal Body Co., Springfield, Mass., Block U, E. P.—Metal bodies.

Scandinavian Fur & Leather Co., New York City, Spaces 5 and 6, U. B.—Fur garments.

Scoville & Peck Co., The, New Haven, Conn., Space 3, U. B.—Pilot searchlight lamps.

Shelby Steel Tube Co., Pittsburg, Pa., Block Y, E. P.—Seamless steel tubing.

Standard Welding Co., The, Cleveland, Ohio, Block X, E. P.—Rims, tubing, etc.

Standard Wheel Co., Terre Haute, Ind., Block H, E. H.—Artillery wheels.

Sprague Umbrella Co., Norwalk, Ohio, Spaces 48 and 50, F. T. B.—Sprague tops.

Swinehart Cushion Tire & Rubber Co., Akron, Ohio, Space A, C. H.—Swinehart nonpuncturable cushion tire.

Smith Co., The A. O., Milwaukee, Wis., Space D, C. H.—Frames, axles, gears, etc.

Smith & Co., Edward, New York City, Spaces 2 and 4, S. T. B.—Varnishes and colors.

Steel Ball Co., Chicago, Ill., Space 1, C. H.—Hill oiler, Hill starter, etc.

Schwarz Wheel Co., Philadelphia, Pa., Space 21—Wheels with dovetailed spokes.

Saks & Co., New York City, B. E.—Clothing.

Timken Roller Bearing Axle Co., Canton, Ohio, Block X, E. P.—Roller bearings.

Trebert Automobile & Marine Motor Co., Rochester, N. Y., Space 13, U. B.—Motors and transmission gears.

Torbenson Gear Co., Inc., Bloomfield, N. J., Block E. E. H.—Gears.

Tokheim Mfg. Co., The, Cedar Rapids, Iowa, Space B, C. H.—Gasolene outfits.

20th Century Mfg. Co., New York City, Block X, E. P.—Lamps.

Utility Co., The, New York City, Space 11, S T. B.—Spark plugs and specialties.

United Motor & Vehicle Co., New York City, Block E, E. H.—Motors.

United Electrical Mfg. Co., The, New York City, Space 12, U. B.—Electric goods.

Upton Motor Co., Lebanon, Pa., Block E, E. H.—Pumps.

Vacuum Oil Co., New York City, Space 29. U. B.—Lubricants.

Veeder Mfg. Co., The, Hartford, Conn., Block U, E. P.—Veeder Odometers, Tachometers, etc.

Valentine & Co., New York City, Spaces 23 and 25—Varnishes.

Weston-Mott Co., Utica, N. Y., Block U, E. P.—Wheels, axles and rims.

Whitney Mfg. Co., Hartford, Conn., Block U, E. P.—Whitney roller chains and standards.

Warner Gear Co., Muncie, Ind., Block X, E. P.—Gears.

Worcester Mfg. Co., Worcester, Mass.—Puncture alarms.

Wray Pump & Register Co., Rochester, N. Y., Space B, C. H.—Pumps and registers.

Warner Instrument Co., Beloit, Wis., Space B, C. H.—Specialties.

Willis Co., E. J., New York City, F. A., B.—Supplies, parts and sundries.

Whitlock Coil Pipe Co., Hartford, Conn., Spaces 42 and 44, F. T. B.—Whitlock coolers.

Webb Co., The, New York City, Space G, C. H.—Speed indicators.

Whitehouse & Co., Chas. F., New York City, Spaces 23 and 25—Specialties.

Wheeler Mfg. Co., Detroit, Mich.—Canopy tops and hampers.

Test of Heavy Oils.

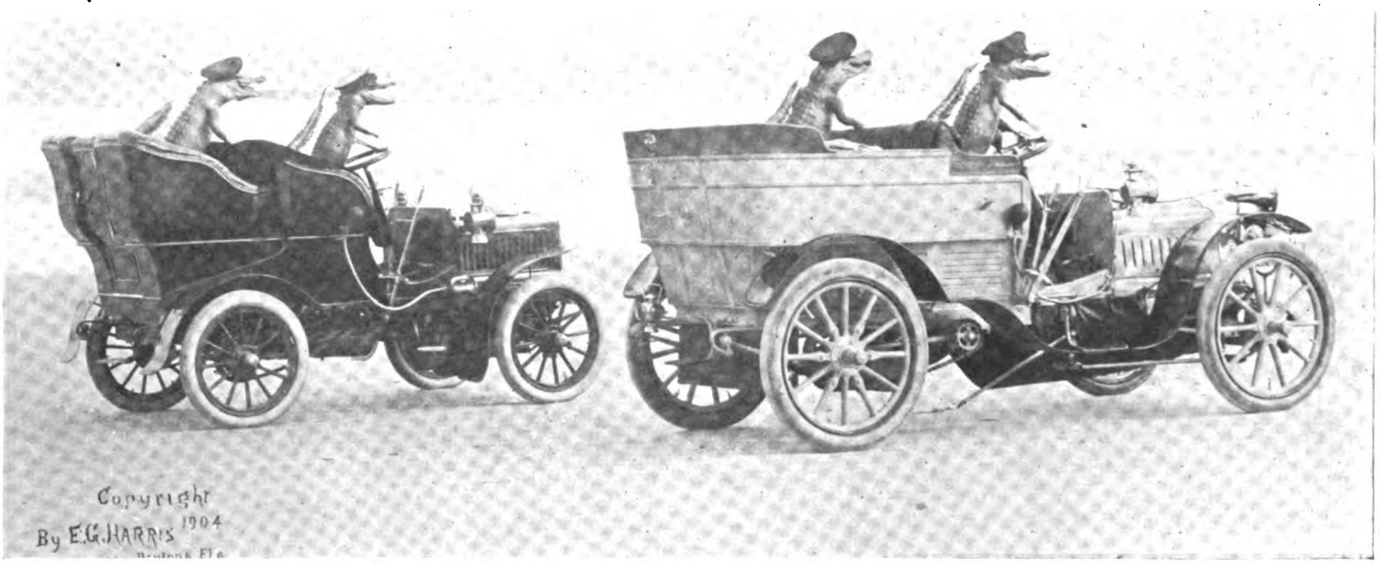
There seems no end to the diversity of tests undertaken in France. The most recent was one designed to demonstrate practically the value of heavy oil as a combustible. For this purpose a number of vehicles—a veritable caravan—at the head of which was a steam automobile, was used. The course was from Paris to Rouen, a distance of 136 kilometres, which was covered at a cost of 4 francs 68 centimes; that is, 39 litres of heavy oil at 12 centimes per litre were used, the average speed being 41 kilometres per hour. The trial was controlled by two representatives of the Minister of War and conducted under the superintendence of a well-known automobile manufacturer.

Italy Encouraging Stage Routes.

With a view to increasing public interest, the Italian government is proposing to grant subsidies to local bodies that are prepared to establish automobile services. The only stipulation is that neither tramways nor railways exist in the chosen districts. These subsidies will probably amount to $100 a kilometre for a service for passengers and freight traffic; $80 where the line is confined to passengers, and $40 where only freight is conveyed.

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All Ready for the Florida Speed Carnival.



For the first time interest in the Ormond-Daytona speed carnival, which will be inaugurated on Tuesday next, may be said to be general. The interest permeates all concerned with automobiles, both in and out of the trade, and the attendance is certain to be of record breaking proportions. There will almost be an exodus from the New York show on Saturday.

The entry list has filled well, being far larger and more representative than ever before, and including a number of new men and new cars. That records are likely to be shattered is indicated by the mile in 37 seconds by H. L. Bowden, the Waltham millionaire, who, with Oldfield, Christie and a few others, is already on the beach.

The entries are as follows: W. K. Vanderbilt, Jr., H. L. Bowden, Harry S. Houpt, Louis S. Ross, Arthur E. McDonald, Edward R. Thomas, F. A. La Roche and E. M. Steck, B. M. Shanley, Jr., F. A. La Roche, Isaac E. Emerson, Harry S. Houpt, Frank H. Croker, W. Gould Brokaw, Standard Automobile Co., R. R. Kimball, George H. Flinn, John Caswell, A. C. Webb, Charles Soules, Charles Soules, Alfred G. Vanderbilt, James L. Breese, James L. Breese, Olds Motor Works, William Wallace, Major C. S. Miller, Joseph H. Heller, S. B. Stevens, Chas. N. Wheeler, Walter Christie, Electric Vehicle Co., Electric Vehicle Co., Henry Ford, W. E. Evans, S. B. Stevens, Charles Canaut, W. J. Edmunds, Louis S. Ross, Rollin H. White, Webb Jay, H. W. Fletcher, Barney Oldfield and M. B. Aultman.

The thirty-six events to be decided are as follows:

1—One hundred miles, International, for the W. K. Vanderbilt, Jr., Trophy.
2—One mile, International Championship, for the Sir Thomas Dewar Challenge Trophy.
3—One mile, time trials, Classes A (1,432 to 2,204 pounds), B (851 to 1,432 pounds), and C (551 to 851 pounds).
4—One kilometre, time trials, Classes A, B and C (weights as in Event No. 3).
5—Ten miles, Ormond Derby, open, for the Major C. J. S. Miller Trophy.
6—Fifty miles, Daytona Handicap, open, for the F. E. C. A. A. Challenge Cup. Conditions as specified in deed of gift.
7—One kilometre, Record Race, open, for the H. L. Bowden Trophy.
8—One mile, steam cars, for the Colonel R. C. Clowry Trophy.
9—One mile, Corinthian, amateur owners only to drive, for the Colonel L. C. Weir Cup.
10—Fifty miles, open to American built cars only, for the Lozier Trophy.
11—Ten miles, Mercedes cars only, for the Allen-Halle Trophy.
12—Ten miles, F. I. A. T. cars only, for the Hollander and Tangeman Cup.
13—Twenty miles, open, for the Edward R. Thomas Championship Trophy.
14—Five miles, stock cars, $1,001 to $1,800, inclusive.
15—Five miles, stock cars, $1,801 to $2,750, inclusive.
16—Five miles, stock cars, $2,751 to $4,000, inclusive.
17—Five miles, handicap, open only to the first four cars in Events Nos. 14, 15 and 16. No entry or fee required.
18—Five miles, stock cars, $4,001 to $6,000, inclusive.
19—Five miles, stock cars, $6,001 to $8,000, inclusive.
20—Five miles, stock cars, $8,001 to $10,000, inclusive.
21—Five miles, open, for the W. Gould Brokaw Trophy.
22—Five miles, Great Ormond Handicap, open only to the first three cars in Events Nos. 18, 19, 20 and 21. Cars to compete in exactly the same condition as in Events 18 to 21, inclusive.
23—Five miles, gasolene stock cars, $650 and under.
24—Five miles, stock cars, $61 to $1,000, inclusive.
25—Ten miles, stock cars, 1,001 to $1,800, inclusive.
26—Ten miles, stock cars, $1,801 to $2,750, inclusive.
27—Ten miles, stock cars, $2,751 to $4,000, inclusive.
28—One mile, time trials, stock cars, price classification as in above events.
29—Ten miles, handicap, open.
30—One kilometre, Class A (1,432 to 2,204 pounds).
31—One kilometre, Class B (851 to 1,432 pounds).
32—One kilometre, Class C (551 to 851 pounds).
33—One mile, Class A, weights as above.
34—One mile, Class B, as above.
35—One mile, Class C, as above.
36—Gymkana race.

As, on the occasion of the Florida speed carnival, the headquarters of the Florida East Coast Automobile Association are this year to be established at Daytona, instead of Ormond, as formerly, Daytona is claiming that share of attention that has been its due. It is carrying with it attention to the spacious Clarendon Hotel, located directly on Daytona Beach and but two minutes from the association's clubhouse. The hotel is modern and high class in every particular; it is steam-heated and electrically lighted; has private baths and also hot and cold water in all rooms. The spacious garage, with competent mechanics, which is attached to the Clarendon, leave nothing to be desired from the motorist's standpoint

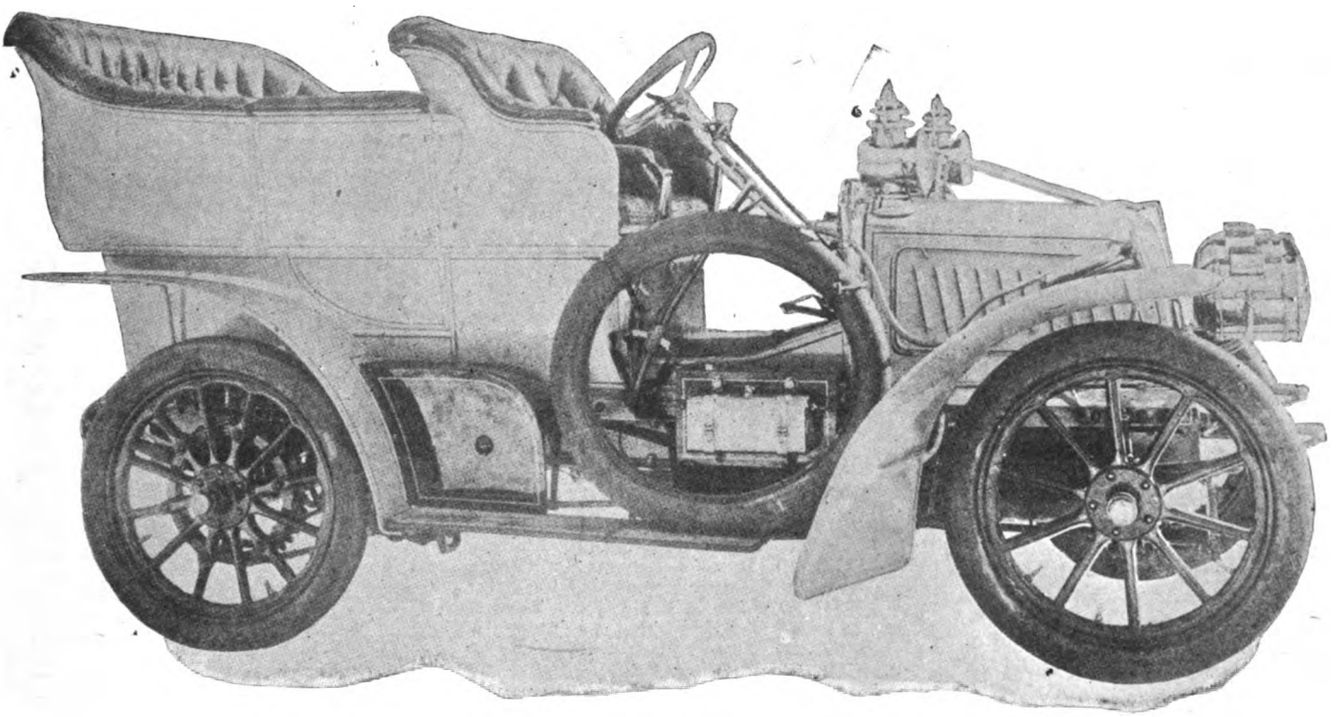
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Packard
Motor Cars
"Ask The Man who owns one"

Packard Motor Car Co.
Detroit, Mich. Member A.L.A.M.

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NOTHING BETTER MADE



24 H. P. BERG TOURING CAR

Cars in stock for immediate delivery

Worthington Automobile Co.

Member Association Licensed Automobile Manufacturers

547 Fifth Avenue ##### 1 East 45th Street

NEW YORK

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To Handle Acmes in New York.

The Acme Motor Car Company of New York, which was incorporated under the laws of the State of New York, promises to prove a notable addition to the trade of the metropolis.

The president of the new company is R. Lewis Julian, of the real estate firm of Stockdale & Julian; the vice-president and general manager of the company is George H. Strout; the secretary and treasurer of the company is J. De Smet Maguire, president of the American Electric & Controller Co. The three above named gentlemen also compose the board of directors for the first year, and all are residents of the city of New York. Mr. Strout is well known among a large majority of those now engaged in the manufacture and sale of automobiles, owing to the fact that he was for six years identified with the bicycle business, and was for three years the sales manager in New York of the Eastern branch of the Monarch Cycle Manufacturing Co., of Chicago.

The new company will occupy on February 1 the salesroom at Nos. 941-943 Eighth avenue, formerly occupied by the Pope Manufacturing Company, and the new company has been made distributing agents for the eastern half of New York, the northern half of New Jersey and Fairfield County, Conn., for the Acme line of automobiles manufactured by the Acme Motor Car Co., of Reading, Pa.

Two Suits Against Stockholders.

Arvide C. Hester, receiver for the defunct Toledo Fire and Police Notification and Auto Parcel Delivery Company, has filed two suits in the Common Pleas oCurt of Toledo, Ohio. One is against Charles F. Nighwander, Maurice Weiss, Louis Litchie, Charles F. Tanner, Charles G. Wilson, George Harris, W. F. Edman, Douglass Long, F. M. Given and Warren B. Wyman, stockholders of the company. Hester avers that the defendants, while directors of the company, received moneys which rightfully belonged to the company, but of which they made no accounting. It is also charged that Harris, Nighwander and Wyman, at different times managers, disposed of property belonging to the concern, for which there was no accounting to the company. Another and separate suit is filed against Warren B. Wyman, and the claim is made that the defendant bought 938 shares of stock in the company at $10 a share, for which he never paid. Judgment is asked for the amount with interest.

How it Climbs Hills.

"It goes well on the flat and romps up-hill in a manner 'almost Japanese.'" This comes direct from England and illustrates the latest effect of the Eastern war upon English as she is written when applied to describing the performance of a late addition to the rapidly growing list of British motor cars—or the tri-car, which is half tricycle, half runabout.

Now for the Chicago Show!

As is already known, the Chicago Show, which opens February 4, is full to overflowing. The complete list of those who secured room and the spaces allotted them has not, however, before been made public. They are as follows:

MAIN FLOOR.

1 to 3	Winton Motor Carriage Co., Berea Road, Cleveland, Ohio.
4, 5	National Motor Vehicle Co., 22d & Belt R. R., Indianapolis, Ind.
6 to 8	Apperson Bros. Automobile Co., Kokomo, Ind.
9 to 12	Knox Automobile Co., Springfield, Mass.
13 to 15	Studebaker Automobile Co., South Bend, Ind.
16	Chicago Motorcycle Co., 536 Wabash avenue, Chicago, Ill.
16	Chicago Caloric Engine Co., No. 536 Wabash avenue, Chicago, Ill.
17 to 19	Packard Motor Car Co., Detroit, Mich.
20 to 23	Electric Vehicle Co., Hartford, Conn.
24	Haynes-Apperson Co., Kokomo, Ind.
25 to 28	Jeffery, Thomas B., & Co., Kenosha, Wis.
29	Duryea Power Co., Reading, Pa.
30 to 32	Woods Motor Vehicle Co., No. 110 East Twentieth street, Chicago, Ill.
33 to 35	Royal Motor Car Co., Lake street, Cleveland, Ohio.
36 to 39	Electric Vehicle Co., Hartford, Conn.
40	Haynes-Apperson, Kokomo, Ind.
41, 42	Elmore Mfg. Co., Clyde, Ohio.
43 to 45	Thomas, E. R., Motor Co., 1,200 Niagara street, Buffalo, N. Y.
46 to 48	Woods Motor Vehicle Co., 110 East Twentieth street, Chicago, Ill.
49, 50	Pierce, George N., Co., 58 Main street, Buffalo, N. Y.
51 to 54	Pope Motor Car Co., 21 Park Row, New York City.
55, 56	Olds Motor Works, 50 Concord avenue, Detroit, Mich.
57, 58	Peerless Motor Car Co., Cleveland, Ohio.
59 to 62	Locomobile Co. of America, Bridgeport, Conn.
63	Mitchell Motor Car Co., Racine, Wis.
64	Maxwell-Briscoe Motor Co., Tarrytown, N. Y.
65, 66	Pierce, George N., Co., 58 Main street, Buffalo, N. Y.
67 to 70	Pope Mfg. Co., 21 Park Row, New York City.
71. 72	Olds Motor Works, 50 Concord avenue, Detroit, Mich.
73, 74	Peerless Motor Car Co., Cleveland, Ohio.
75 to 78	Locomobile Co. of America, Bridgeport, Conn.
79	Mitchell Motor Car Co., Racine, Wis.
80	Maxwell-Briscoe Motor Co., Tarrytown, N. Y.
81 to 83	White Sewing Machine Co., 300 Rose Building, Cleveland, Ohio.
84, 85	Kirk Mfg. Co., Toledo, Ohio.
85 to 86	Northern Mfg. Co., Detroit, Mich.
87, 88	Autocar Co., Ardmore, Pa.
89, 90	Cadillac Automobile Co., 1,343 Cass avenue, Detroit, Mich.
91, 92	Stevens, J., Arms & Tool Co., Chicopee Falls, Mass.
93 to 96	Franklin, H. H., Mfg. Co., Syracuse, N. Y.
97, 98	Blomstrom, C. H., Motor Co., Detroit, Mich.
99	Union Automobile Co., Union City, Ind.
100	Adams Co., Dubuque, Iowa.
101, 102	Columbus Motor Vehicle Co., Columbus, Ohio.
103	Moline Automobile Co., Moline, Ill.
104	Check Room, Public Stenographer, Photographer.
105, 106	Buick Motor Car Co., Jackson, Mich.
107, 108	Wayne Automobile Co., Dubois and Franklin streets, Detroit, Mich.
109, 110	St. Louis Motor Carriage Co., 1,212 North Vandeventer avenue, St. Louis.
111, 112	Cleveland Motor Car Co., Cleveland, Ohio.
113	Monarch Auto Car Co., 218 La Salle street, Chicago, Ill.
114	Marion Motor Car Co., 113 Monument Place, Indianapolis, Ind.
115 to 117	Banker, A. C., Co., 1,255 Michigan avenue, Chicago, Ill.
118	Hagmann & Hammerly, Oakley avenue, Chicago, Ill.
119	Holsman Automobile Co., Chicago, Ill.
120, 121	Premier Motor Car Mfg. Co., Indianapolis, Ind.
122 to 125	Waltham Mfg. Co., Waltham, Mass.
126, 127	Welch Motor Car Co., Detroit and Pontiac, Mich.
128	Wayne Works.
129 to 131	Reo Car Co., Lansing, Mich.
132, 133	Model Gas Engine Works, Auburn, Ind.
134, 135	Austin Automobile Co., Grand Rapids, Mich.
136 to 140	Ford Motor Co., Detroit, Mich.
141	Reliance Motor Car Co., 67 Fort street, Detroit, Mich.
142	Auburn Automobile Co., Auburn, Ind.
143	Tincher Automobile Co., 6.521 Wentworth avenue, Chicago, Ill.
144	Kilfyre, 84 La Salle street, Chicago, Ill.
145, 146	Standard Wheel Co., Terre Haute, Ind.
147, 148	Mead Cycle Co., 1,235 Wabash avenue, Chicago, Ill.
149	Dolson, John L., & Sons, Charlotte, Mich.

ANNEX (First Floor).

150, 151	Acme Motor Car Co., Reading, Pa.
152	Hammer Motor Co., 573 Gratiot avenue, Detroit, Mich.
153 to 155	American De Dietrich Motor Car Co., 1½ W. Thirty-fourth street, New York.
156	Michigan Automobile Co., Kalamazoo, Mich.
157, 158	Bartholomew Co., Peoria, Ill.
159, 160	Royal Automobile Co., Cleveland, Ohio.
161	Stearns, F. B., Co., Cleveland, Ohio.

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162 Michigan Automobile Co., Kalamazoo, Mich.
163 Pierce Engine Co., Racine, Wis.
164 Pungs-Finch Automobile & Gas Engine Co., Detroit, Mich.
165, 166 Reid Mfg. Co., Detroit, Mich.
167 Stearns, F. B. & Co., Cleveland, Ohio.
168 to 172 Vehicle Equipment Co., Fiftieth street and Broadway, New York City.
173, 174 Stoddard Mfg. Co., Dayton, Ohio.
175 Marble-Swift Automobile Co., 29½ Aldine Square, Chicago, Ill.
176 Fredonia Automobile Co., Youngstown, Ohio.
177 Caldwell Lawn Mower Co., Newburg, N. Y.

GALLERY.

179 Sprague Umbrella Co., Norwalk, Ohio.
180 Dow Portable Electric Co., Braintree, Mass.
181 Warner Instrument Co., Beloit, Wis.
182 Steel Ball Co., 840 Austin avenue, Chicago, Ill.
183 Whitney Mfg. Co., Hartford, Conn.
184 Aurora Automatic Machinery Co., Aurora, Ill.
185 Autocoil Co., Jersey City, N. J.
186 Wray Pump & Register Co., Rochester, N. Y.
187, 188 Briscoe Mfg. Co., Detroit, Mich.
189 Hardy, R. E., Co., 225 West Broadway, New York City.
190 Swinehart Clincher Tire & Rubber Co., Akron, Ohio.
191, 192 Standard Oil Co., 5 Wabash avenue, Chicago, Ill.
193 Hyatt Roller Bearing Co., Harrison, N. J.
194 Hine-Watt Mfg. Co., 60 Wabash avenue, Chicago, Ill.
195, 196 Morgan & Wright, 331 West Lake street, Chicago, Ill.
197 Twentieth Century Mfg. Co., 17 Warren street, New York City.
198 Dayton Electrical Mfg. Co., 94 Rieboldt Building, Dayton, Ohio.
199, 200 Diamond Rubber Co., Akron, Ohio.
201 Dietz, R. E., Co., 60 Laight street, New York City.
202 Firestone Tire & Rubber Co., 550 Wabash avenue, Chicago, Ill.
203 Motsinger Device Mfg. Co., Pendleton, Ind.
204 Standard Welding Co., Cleveland, Ohio.
205, 206 Hartford Rubber Works Co., Springfield, Mass.
207 Veeder Mfg. Co., Hartford, Conn.
208 Fisk Rubber Co., Chicopee Falls, Mass.
209, 210 Gray & Davis, Amesbury, Mass.
210, 211 G. & J. Tire Co., Indianapolis, Ind.
212, 213 Badger Brass Mfg. Co., Kenosha, Wis.
213, 214 Goodyear Tire & Rubber Co., Akron, Ohio.
215 Rose Mfg. Co., 910 Arch street, Philadelphia, Pa.
216 Goodrich, B. F., Co., Akron, Ohio.
217 Bowser, S. F., & Co., Fort Wayne, Ind.
218, 219 Remy Electric Co., Anderson, Ind.
220 Herz & Co., 56 Grand street, New York City.
221 Brennan Mfg. Co., Syracuse, N. Y.
222 Knoblock-Heideman Mfg. Co., South Bend, Ind.
223 Pope Mfg. Co., 21 Park Row, New York City.
224 Splitdorf, C. F., 23 Vandeventer street, New York City.
225 Shelby Steel Tube Co., 1,820 Frick Building, Pittsburg, Pa.
226 India Rubber Co., New Brunswick, N. J.
227 National Carbon Co., Cleveland, Ohio.
228 Tokheim Mfg. Co., Cedar Rapids, Iowa.
229 McGeihan Odometer & Mfg. Co., 137 W. Thirty-second street, New York City.
230 Warner Gear Co., Muncie, Ind.
231 Electric Contact Co., 202 Centre street, New York City.
232 American Roller Bearing Co., 34 Blinford street, Boston, Mass.
233 Brown-Lipe Gear Co., Syracuse, N. Y.
234 Baldwin Chain Mfg. Co., Worcester, Mass.
235 Timkin Roller Bearing Co., Canton, Ohio.
236 Goodrich, B. F., Co., Akron, Ohio.
237 Imperial Wheel Co., Flint, Mich.
238 Detroit Steel Products Co., Detroit, Mich.
239 Oliver Mfg. Co., 203 South Desplaines street, Chicago, Ill.
240 to 244 A. O. Smith Mfg. Co., Milwaukee, Wis.
245, 246 Byrne, Kingston & Co., Kokomo, Ind.
247 Jones, J. W., 127 West Thirty-second street, New York City.
248 Stolp Mfg. Co., Huron & Townsend streets, Chicago, Ill.
249 Webb Co., 417 Park Row, New York City.
250 Pennsylvania Rubber Co., Jeanette, Pa.
252 Long Mfg. Co., Michigan and La Salle streets, Chicago, Ill.

ANNEX (Second Floor).

No. 261 to 263, E. J. Willis & Co.; 264, Hill Mfg. Co.; 265, Pneumatic Tire Protector Co.; 266, Autocar Equipment Co.; 267, Chicago Storage Battery Co.; 268, Cullman Wheel Co.; 269, Chicago Rawhide Mfg. Co.; 270, Joseph Dixon Crucible Co.; 271, Whiteley Steel Co.; 272 to 276, Excelsior Supply Co.; 277 to 279, C. P. Kimball & Co.; 280, Vesta Accumulator Co.; 281, Standard Carriage Lamp Co.; 282 to 286, Excelsior Supply Co.; 287 to 289, C. P. Kimball & Co.; 290, McCord & Co.; 291, American Electric Novelty & Mfg. Co.; 292, Charles Kaestner Mfg. Co.; 293, Hartford Suspension Co.; 294, Hendee Mfg. Co.; 295 to 297, Automobile Supply Co.; 298 and 299, Motor Car Supply Co.; 300, Sherwin-Williams Co.; 301 to 303, Motor Car Equipment Co.; 304, J. Lauth Co.; 305 and 306, Chicago Battery Co.; 307 and 308, Beckley-Ralston Co.; 309 and 310, Pantasote Co.; 311 and 312, Wheeler Mfg. Co.; 313, Limousine & Carriage Co.; 314, Star Remedy Co.; 315, Merrill-Stevens; 316, William Roche; 317 and 318, C. B. Borland; 319 and 320, Exmoor Storage Battery Co.; 321 to 323, Motor Car Supply Co.; 325, Valentine & Co.; 326, Concentrated Acetylene Co.; 327, Advance Packing & Mfg. Co.; 328, Continental Engine Co.

Suits Follow Garage Failure.

Further litigation in the case of the bankrupt Plainfield (N. J.) Automobile Garage has resulted in non-suit being given by Justice Smalley in the case of Joseph Loughead against Andrew Wilson at Plainfield last week. The evidence brought out by the lawyer for the defence from Loughead himself, showing that the case was one which concerned the Plainfield Automobile Garage, was what lost the case for the plaintiff, who was suing for the recovering of money advanced in payment of the garage's debts.

When the garage closed up there was the sum of $56.55 owing to the employes, all of which was paid by Loughead on the verbal agreement with Andrew Wilson that the latter would pay half of the amount. The evidence was brought out in cross-examination showing that the debt was one in which the company was concerned and the result was, as stated, a non-suit.

Cannon Goes With Grout.

By what seems to be a natural transition George C. Cannon, well known as a close student of steam vehicle construction, has graduated into the automobile industry. It became known this week that he has become the consulting engineer of the Grout Bros. Automobile Co., of Orange, Mass. It is stated that some of his ideas have already been incorporated in the 1905 Grout models.

Cannon will be remembered as the Harvard student who made the steam automobile his hobby. As long ago as 1901 he changed over a Locomobile steam runabout, and with it made records on the Providence (R. I.) track. Afterward he built several cars of his own, embodying some pet theories in boiler construction, etc., and they proved very fast.

Pope's Garage Nearing Completion.

Work on the pretentious new Pope building, Broadway and Fifty-fifth street, this city, has now progressed sufficiently to permit a good idea of its appearance to be obtained. The outside work is practically completed, and the putting in of the plate glass front is now in progress; that of the ground floor has been finished. The entire front will be of glass, except the steel framework and two strips of light colored brick, which mark the finish of the ends.

The building has a frontage of 75 feet on Broadway, and is four stories high. The words, "Pope Garage," in bold lettering appears on the front just under the roof, worked in metal. It is probable that the building will be ready for occupancy in February.

Detroit Show Sold Up.

All the space in the Light Guard Armory, where the Detroit show is to be held from February 13 to 18 has been sold, including the entire gallery. Secretary Lewis has been overwhelmed with applications of late, but has been obliged to refuse them all. He says he could have disposed of nearly double the space at his disposal.

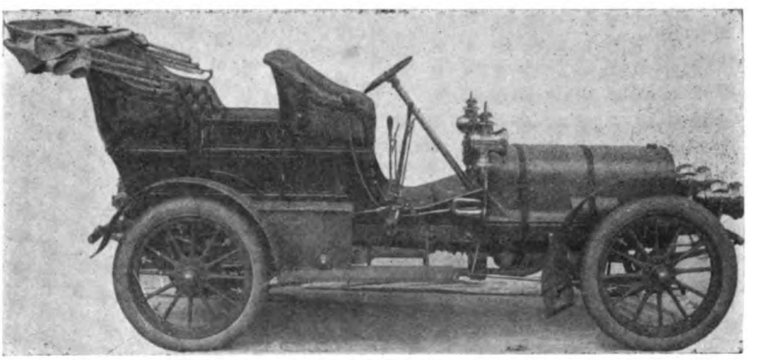
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THE SEAL OF PUBLIC APPROVAL WAS PLACED ON

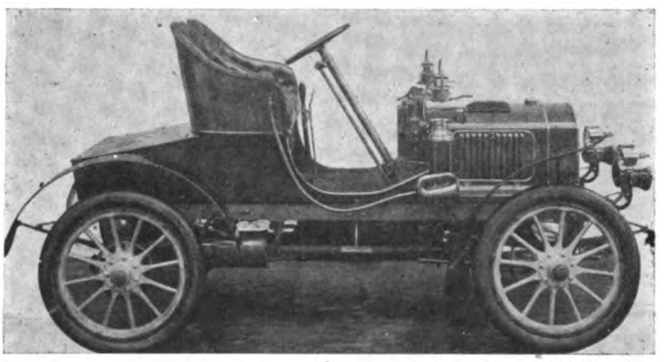
THE ACME CARS

AT THE SHOW.

Their power, simplicity and perfection in detail has placed them among the leaders of the year. Agencies were closed all over the country, but we have a few desirable territories left.



ACME, Type 8. Price, complete, as illustration, **$2750.** Four-cylinder, 28 H.P., four speeds forward and reverse, sliding transmission, interlocking gear-shift and automatic carbureter. Weight 2275 lbs.



ACME, Type 10. Price, complete, as illustration, **$1000.** Two-cylinder vertical, 16 H.P., three speeds forward and reverse, sliding transmission, interlocking gear shift and automatic carbureter. Weight 1175 lbs.

SEE US AT THE CHICAGO SHOW.

ACME MOTOR CAR COMPANY,

DEVLIN & CO., 1407 Michigan Blvd., Chicago, Ill.
Western Distributors.

READING, PA.

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POPE

Be sure to see our

1905 Models

AT THE AUTOMOBILE SHOW.

POPE-WAVERLEY ELECTRICS.

Fifteen distinct models, $850 to $2,250.

Trucks Built on Specifications of Purchaser.

POPE MOTOR CAR CO., Indianapolis, Ind.

POPE-TOLEDO GASOLINE TOURING CARS.

20 H. P. Side Entrance,	Price,	$2,800
30 H. P. " "	"	3,500
45 H. P. " "	"	6,000

50 H. P. Pullman built to order.

POPE MOTOR CAR CO., Toledo, Ohio.

POPE-HARTFORD and POPE-TRIBUNE
Gasoline Cars, 16 and 12 H. P., $1600. and $900.

POPE MANUFACTURING CO.,
Dept. A, HARTFORD, CONN.

Members Association Licensed
Automobile Manufacturers.

AUTOMOBILES

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HAVE MEN PROGRESSED?

History Shows that Since Time of Chariots they Have Opposed All New Vehicles.

While each succeeding generation is given to prattling of its superior enlightenment and of the progress it has made, nothing so well proves that the nature of mankind has undergone no change than the reception accorded the several forms of improved locomotion. While the grandfathers of to-day laugh to scorn their parents' opposition to locomotives, they and their own sons were similarly fearful of bicycles and trolleys; and to-morrow their grandchildren will read or listen with wonderment to the history of opposition to automobiles now being made by their immediate forebears.

It is possible to go back to the time of the chariot to prove how empty is the boasted advancement of the present day. That clumsy two wheeled vehicle was of very ancient use in war, but the carriage for the purpose of private conveyance was known first to ancient Rome at a comparatively late period, and there the law restricted its use to persons of high rank, who sent messengers in advance warning the crowds in the street to make way for its coming. This was necessary because there were no sidewalks.

In mediæval and chivalrous Europe the use of carriages was prohibited because it was considered that they produced effeminacy. Feudal usages of the time required men of the upper class to be expert horsemen, and the suzerain would not permit his vassals any practice that rendered them unfit for military service. Monks and women rode she asses or palfreys. The women frequently mounted behind their armored lords on the warlike steeds they bestrode. The disdain of carriages at that time is not surprising when the crude contrivances called carriages in that day are considered.

Covered carriages were not known until the beginning of the sixteenth century, when their use was confined to women of high rank. They were forbidden by law to all others. A German authority on the subject says: "Covered carriages were for a long time forbidden even to women, but about the end of the fifteenth century they began to be employed by the Emperor, Kings and princes in journeys and afterward on state occasions." There is still in existence an ordinance issued by Philip the Fair in France, in which citizens' wives are prohibited the use of carriages. As late as 1550 there were only three carriages in Paris. One of these belonged to the Queen, the other to Diana of Poitiers and the other to Rene de Laval, a very corpulent nobleman who was unable to ride on horseback.

It was as late as the beginning of the seventeenth century before coaches were employed as a means of public conveyance, and it was in 1601 that a bill was introduced in Parliament "to restrict the excessive use of coaches," but it was rejected on second reading. This bill, which was much discussed and agitated, seems to have been urged largely on the same ideas that influence the introduction of anti-automobile bills. It was said the coaches were dangerous to pedestrians, and also that they frightened the horses that met them in the highway. The chief supporters of the bill in Parliament, however, were the friends of the Thames watermen, with whom the coaches competed in carrying passengers. A poet of the times, who was in sympathy with the watermen, wrote:

"Carroaches, coaches, jades and Flanders' mares
Do rob us of our shares, our areas and fares.
Against the ground we stand and knock our heels,
While all our profit runs away on wheels."

It is a historical fact, and a very curious one in the light of modern progress, that travel in carriages was prohibited by law all over Europe for several centuries, and that these vehicles gradually came into use over prejudice and adverse legislation which both ignorance and prejudice induced. The motor car, whether in its present form or of an improved and cheaper construction as merely traveling the route followed by all other improved forms of locomotion, and will win its way into popular favor as the others "won out."

Maine Club Joins With Farmers.

Owing to the inactivity of the Automobile Club of Maine, at Portland, Lewiston motorists have organized the Eastern Automobile Club, and contemplate undertaking a good roads propaganda in connection with the Maine State Grange.

There has been absolutely nothing done by the Automobile Club of Maine during the present season. Not a run has been attempted, and, as far as is known, no organized movement has been begun for the betterment of Maine roads. And this, too, when every owner of an automobile is complaining about the condition of the thoroughfares of Maine. After having had a two days' conference with members of the Maine State Grange, which sat in Lewiston, President C. V. Emerson of the Eastern Club outlined his plans thus:

"Our club has incorporated in its constitution and bylaws a clause relating to the improvement of roads in the State of Maine. I was very glad to read the admirable suggestions of the master of the Maine State Grange in regard to better roads in Maine.

"Our automobile club, and probably every other automobile club in Maine, will join hands with the grange in presenting this matter before the Maine legislature this winter. At the next meeting, which will be held soon, we shall combine with the latter in a proper presentation of this important feature of Maine's future prosperity before the legislature this winter.

"We are with the grange, heart and soul, in this matter."

INUNDATION IN INDIANA

Legislative Floodgates Opened and a Deluge of Proposed Laws Follows—The Text of Them.

Four State Senators have endeavored to answer what they believe to be the cry of the public for automobile legislation by introducing bills in the Indiana Senate. Farber, of Clinton and Carrol counties; Moore, of Putnam; Bell, of Lake and Porter, and Crumpacker, of Laporte and Starke, are the sponsors of measures introduced last week, and the methods of each differ from those of the others.

Senator Moore proposes that every owner of an automobile shall obtain a license from the State Auditor, and that a record of each license shall be kept, together with the consecutive numbers. These numbers must be displayed on the rear of all machines. Notice of any change of ownership in a machine must be filed with the auditor. For a violation of the section containing these provisions the penalty shall be a fine of not more than $500 or imprisonment in the county jail for not more than six months.

The speed limit shall be ten miles an hour inside city limits and twelve miles an hour outside. The penalty for a violation of the speed regulation shall be the same as for the first section.

It is provided that drivers of automobiles shall stop on the signal of any person in another vehicle. The penalty for a violation of this provision is fixed at a maximum of $1,000 fine or imprisonment, at the discretion of the court.

All automobiles shall be equipped with latest patterns of brakes, horns and lamps. At night a white light shall be displayed in front and a red light at the rear. For violating this section the penalty shall be not more than $100 or imprisonment, at the discretion of the court.

The bill offered by Senator Crumpacker limits the speed of automobiles in the business portion of a city to eight miles an hour, in the residence section to fifteen miles an hour and outside the city to twenty miles an hour. White lights shall be displayed on the front and red lights at the back of all machines.

The bill offered by Farber requires automobile drivers to keep to the right side of the road in passing vehicles, and to leave one-half the road free for other traffic. The speed limit is fixed at ten miles an hour in cities and twenty miles an hour outside cities. The penalty is fixed at a fine of not less than $20 or more than $100, to which may be added imprisonment in jail not to exceed thirty days for any violation of the law.

The measure proposed by Senator Bell has several features that are different from the others. One provision is that the speed of an automobile shall be slackened to four miles an hour when approaching or passing

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another vehicle, and to the same rate of speed when approaching a crossing or a turn in a road. In case of a horse becoming frightened, it is provided the driver of an automobile shall stop his machine and not proceed until the animal is pacified.

To road supervisors are given police powers to regulate the speed of automobiles, and they are to receive 50 per cent. of any fine that may be imposed. The penalty for any violation of the act is to be a fine of not less than $5 or more than $100, to which may be added imprisonment not to exceed thirty days.

In the House, Representative Martin W. Yencer, of Wayne county, has offered still another bill which seems the fairest of the lot. It provides that the speed limit outside cities shall be twenty miles an hour for automobiles and inside corporation lines shall be ten miles an hour. By the proposed law, motor cars would be required to lessen their speed at all street crossings, and always when approaching and passing any vehicle drawn by a horse. Should the horse appear frightened, the bill provides, the person driving the machine must bring it to a standstill.

It is provided by Yencer's bill that no city or town or borough shall have any power to make any ordinance respecting the speed of motor vehicles, and that no ordinance heretofore or hereafter drawn by any city or town shall have any force or effect.

One section of the bill sets out that the Mayor of any city or the Selectmen of any town may, upon special occasion, whenever in their judgment it may be deemed advisable, grant permits to any person or to the public to run such motor vehicles during a specified time, or until such permit is revoked, upon specified portions of public highways, at any rate of speed.

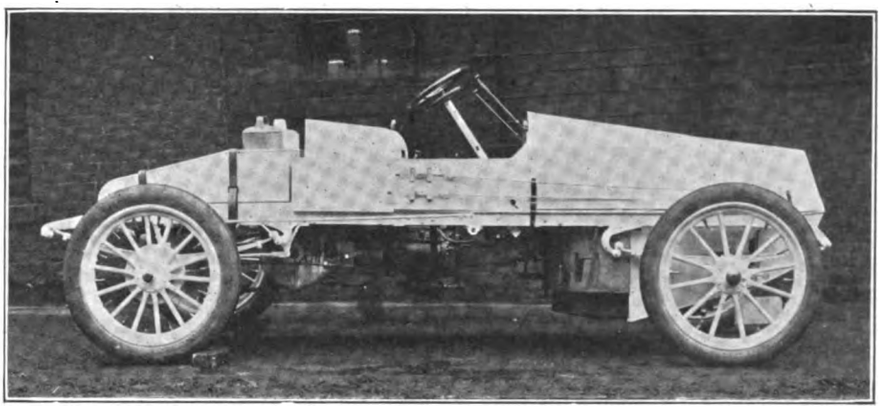
The penalty clause provides for a fine of not more than $200, which may be assessed for aviolation of the act. An emergency is declared to make the act take effect from the date of its passage.

Still another bill is fermenting in the brain of Representative McDowell, of Wells county. He has not been able to reduce it to writing, but he inclines to a measure similar to the threshing machine law. This requires such machines to halt when meeting other vehicles, and also that engine not only be stopped, but the man in charge is compelled to lead around it any horse that may show signs of fright.

Meanwhile Mr. McDowell has added to the gaiety of Indiana by preparing a bill aimed at circuses and the like. He would establish one price of admission to all—no reserved seats for him!

Though the Pike's Peak climb from Denver is still "in the air," three sanguine members of the Chicago Automobile Club have already sent in their entries. They are Dr. H. E. Thomas, H. Hulman, jr., and Jerome A. Ellis. If the climb occurs Dr. Thomas will drive the 90 horsepower Locomobile which he has entered in the International Cup race, and Ellis will use a special 75 horsepower Haynes-Apperson.

White's First Racing Car.



Rollin H. White's New Racer, Which Makes Its "Debut" at Ormond-Daytona.

Hunter Heads Dallas Club.

The Dallas (Tex.) Automobile Club has elected the following officers for the 1905 term: President, John G. Hunter; first vice-president, E. H. R. Green; second vice-president, Henry Garrett; third vice-president, E. J. Kiest; secretary, Eugene Corley; treasurer, Gross R. Scruggs; directors, S. H. Boren and Henry Garrett (three years), W. H. Haggard (one year), Jess Illingworth (two years), E. J. Kiest (three years), Sam Morgan (one year), S. D. Murray (two years), J. D. Scofield and George A. Titterington (one year).

The Colonel Accepts the Challenge.

Things are getting warm in Dallas, Tex. No sooner had Colonel E. H. R. Green's chauffeur set up the first American 100-mile record than Houston and Fort Worth were heard from. J. Howard Hughes (Columbia), of the former place, and A. B. Wharton (Peerless), of Fort Worth, both of whom had previously been beaten by Colonel Green's car, hurled challenges. The colonel lost no time in accepting them, and has set February 11 as the date for the race. It will occur on the Fair Grounds track at Dallas.

Anxious to Jail Automobilists.

The West End Improvement Association, a body of elderly, wealthy and very respectable New Yorkers, in which a few professional reformers are conspicuous, is very anxious that automobilists who infringe the speed law be placed behind the bars, without the usual option of a fine. Accordingly they have hired a lawyer and sent him to Albany, with a view of urging a measure of the sort. The association is so thorough in its respectability that they do not concern themselves with speeding horsemen or cyclists.

Pasadena's Acrobatic Bicycle Policemen.

The bicycle police of Pasadena, Cal., will take a lot of beating. Two of them recently arrested an automobilist, and when the case came up last week they asked the court and a jury to believe that they had, while at full speed, pulled out their stop watches and timed the car over a measured course. Computation brought out that they had performed this wonderful feat of timekeeping while going at the rate of 26.6 miles an hour. It is not surprising that the jury refused to take stock in such marvellous agility, even on the part of policemen, and acquitted the defendant.

Coyote Hunter Heard From.

L. E. Bartels, who is described as the pioneer coyote hunter of Colorado, has offered to pilot a party of Denver automobilists who are considering the practicability of a coyote hunt with automobiles. A number of mounted attendants with greyhounds will accompany the party; coyotes will be started in some of the eastern counties which are as level as floors, and many chauffeurs believe they will be able to keep pace with the dogs. Colorado Springs motorists are also interested in the proposed hunt, and it is probable a trial will be made soon.

Carousing Chauffeur Goes to Jail.

They do some things better in England. For taking his master's car without permission and driving furiously in London at 2 o'clock in the morning, an Englishman's servant was given two months' imprisonment. He dashed into an excavation, the vehicle jumping a hole 4 feet 6 inches wide. His only excuse was that it was dangerous to pull up because the roads were "skiddy." The magistrate declared that the case was not one for a fine, so gave the man two months' imprisonment.

Buffalo Club in New Quarters.

Quarters in the Teck Theatre Building are to be leased for the clubrooms of the Automobile Club of Buffalo. This was decided upon at a meeting of the board of governors held last Saturday, when a committee, consisting of Dai H. Lewis, W. H. Baker and H. A. Meldrum, was appointed to make the final arrangements. It is expected that the new home of the organization will be ready for occupancy by the middle of February.

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Michelin

The King of all Pneumatic Tires

Why? The proof—

During the year 1904 MICHELIN TIRES did not lose a single important race, and all the cups have been won on them.

March	31.	Rothschild Cup	France
April	1.	De Caters "	"
May	20.	Chasseloup-Laubat Cup	"
June	17.	GORDON-BENNETT CUP	Germany
July	26.	St. Louis Non-Stop Run	America
Sep.	4.	Brescia Circuit (World's Fastest Road Race)	Italy
Sep.	15.	Consuma Cup	"
Oct.	8.	Vanderbilt Cup	America

1905—First Important Race this Year.

Delhi to Bombay Reliability Contest, Dec. 26–Jan. 2. Count Guilio de Groppelo driving a 16 20 H. P., F. I. A. T., with Michelin Tires won the cups offered by the MAHARAJAH of KAMPUR and the MAHARAJAH of GWALIOR.

The more you know about tires the better you like the MICHELIN.

Immediate delivery. All sizes for touring and racing. Write for instruction book, free.

MICHELIN TIRE AMERICAN AGENCY
Incorporated
6 West 29th Street, New York
E. D. WINANS, General Manager

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Gasoline Automobiles and Selden Patent

United States Letters Patent No. 549,160, granted to George B. Selden, control broadly all gasoline automobiles which are accepted as commercially practical.

The Commissioner of Patents, in his annual report for 1895, said:

"Selden, in 1895, received a patent, Nov. 5, No. 549,160, which may be considered the pioneer invention in the application of the compression gas engine to road or horseless carriage use."

The following manufacturers and importers who deal in the leading gasoline cars of the United States and Europe, ranging from 4 to 100 h. p., are licensed under the Selden patent:

American Manufacturers.

APPERSON BROS. AUTOMOBILE CO. ..	Kokomo, Ind.
THE AUTOCAR CO.,	Ardmore, Pa.
BUICK MOTOR CO.,	Flint, Mich.
BUFFALO GASOLENE MOTOR CO.,	Buffalo, N. Y.
CADILLAC AUTOMOBILE CO.,	Detroit, Mich.
CREST MANUFACTURING CO.,	Dorchester, Mass.
THE COMMERCIAL MOTOR CO.,	Jersey City, N. J.
ELECTRIC VEHICLE CO.,	Hartford, Conn.
ELMORE MANUFACTURING CO.,	Clyde, O.
H. H. FRANKLIN MANUFACTURING CO.,	Syracuse, N. Y.
THE HAYNES-APPERSON CO.,	Kokomo, Ind.
THE KIRK MANUFACTURING CO.,	Toledo, O.
KNOX AUTOMOBILE CO.,	Springfield, Mass.
LOCOMOBILE CO. OF AMERICA,	Bridgeport, Conn.
NORTHERN MANUFACTURING CO.,	Detroit, Mich.
OLDS MOTOR WORKS,	Detroit, Mich.
PACKARD MOTOR CAR CO.,	Detroit, Mich.
THE PEERLESS MOTOR CAR CO.,	Cleveland, O.
THE GEORGE N. PIERCE CO.,	Buffalo, N. Y.
POPE MANUFACTURING CO.,	Hartford, Conn.
POPE MOTOR CAR CO.,	Toledo, O.
THE SANDUSKY AUTOMOBILE CO.,	Sandusky, O.
THE STANDARD MOTOR CONSTRUCTION CO.,	Jersey City, N. J.
THE J. STEVENS ARMS & TOOL CO.,	Chicopee Falls, Mass
SMITH & MABLEY, INC.,	513 7th Ave., N. Y.
THE F. B. STEARNS CO.,	Cleveland, O.
STUDEBAKER AUTOMOBILE CO.,	South Bend, Ind.
E. R. THOMAS MOTOR CO.,	Buffalo, N. Y.
WALTHAM MANUFACTURING CO.,	Waltham, Mass.
THE WINTON MOTOR CARRIAGE CO.,	Cleveland, O.
WORTHINGTON AUTOMOBILE CO.,	547 5th Ave., N. Y.

Importers.

AUTO IMPORT CO.,	1786 Broadway, N. Y.
SIDNEY B. BOWMAN AUTOMOBILE CO.,	52 W. 43d St., N. Y.
THE CENTRAL AUTOMOBILE CO.,	1684 Broadway, N. Y.
HOLLANDER & TANGEMAN,	5 W. 45th St., N. Y.
F. A. LA ROCHE CO.,	147 W. 38th St., N. Y.
STANDARD AUTOMOBILE CO. OF N. Y.,	136 W. 38th St., N. Y.
SMITH & MABLEY, INC.,	513 7th Ave, N. Y.
PANHARD & LEVASSOR,	232 W. 13th St., N. Y.
WORTHINGTON AUTOMOBILE CO.,	547 5th Ave., N. Y.

Suits for infringement are now pending against manufacturers, importers and users of and dealers in unlicensed cars, and the policy of the licensees hereafter will be aggressive.

Do Not Buy a Lawsuit with Your Automobile!

SEE THAT A SELDEN LICENSE PATENT PLATE IS ON THE CAR BEFORE YOU PURCHASE.

ALL PERSONS ARE NOW FINALLY WARNED

that suits will be brought against firms and individuals manufacturing, selling and using unlicensed gasoline automobiles.

William A. Redding, Esq., Attorney, of 38 Park Row, New York City, has been authorized to make adjustments with persons who have in the past unwittingly infringed the Selden Patent by the importation or purchase of unlicensed foreign made automobiles, and who choose now to guard themselves against prosecution.

Many individual infringers already have sought and effected settlements.

ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS,

7 EAST 42d ST., NEW YORK.

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The Paint Shop in Cold Weather.

During the cold months of the year the carriage paint shop is probably the most unwholesome department connected with the carriage making or repairing business, says the Carriage Monthly. Unfortunately, what modern ingenuity and invention has done for many industries has as yet been denied the paint shop, and poor light, worse ventilation and equally bad heating arrangements have combined to expose the workman to conditions inimical to his health and to his earning capacity.

It would be difficult to prophesy the results which might accrue if paint shops were better lighted, better heated and better ventilated. A travelling salesman who sees the larger portion of the Northeastern States recently told the writer that, taking the average carriage paint shop as a basis for an estimate, it is the most poorly provided for shop in the country, and the facilities for handling and painting work are totally inadequate and notoriously ill proportioned to the importance of the industry in question.

This is a seemingly sweeping indictment, but there is no doubt that paint shop conditions and conveniences are far from being what they should be. Indeed, speaking from actual observation and experience, we may justly deplore the existing status of the paint shop in respect to all that assists to make it a better paying and healthier department of the carriage business.

The paint shop so situated that it must depend upon its own resources for heating power should be made as tight and weatherproof as possible, in order that every fraction of heat generated by the stove, furnace or other heating device may be utilized. The volume of lost heat is an item of large expense to a majority of shops, and in the paint shop the loss is more quickly and more extensively felt than elsewhere. While the dull season hangs heavy over painting affairs, it is a matter of finance, not to say of personal comfort, to look the shop carefully over and tighten up window casings, side walls, ceiling and floor. A nail here and there, driven at the right spot, and a piece of siding placed where it is needed, or a window tightened and made more secure, are the means to an end which the twentieth century carriage painter may well urgently desire. There is small danger of getting the paint shop too warm, and, if so, an excess of heat may very quickly be disposed of. Better at all times to have a surplus of heat at disposal.

Lumber placed where it will do the most good is cheaper than coal, and both are cheaper than labor that cannot be utilized in a room insufficiently heated.

Ventilation is the handmaid of heat, and no shop can be properly heated until it is adequately ventilated. It is important, therefore, that in making the shop weather proof and heat retaining provision be also made for some system that really ventilates without exposing the work to danger from stirring dust and dirt atoms. There are numerous ventilating devices which open into the shop from the roof, but the old style, inexpensive sort are, after all, about as effective as any.

Each individual room should be furnished with a ventilator leading directly out to the roof, and it should be arranged so that opening and closing of the device may be regulated by the workman in the room. Many of the so-called modern ventilators cannot be operated from the shop, which is a marked disadvantage.

Of course, ventilation secured through lowered and raised windows is better than no ventilation, but it is a crude system, and not reliable nor thorough enough to meet the needs of a shop carrying a vitiated and poison saturated air as does the paint shop.

Moreover, in cold weather the ventilation which the window offers brings with it so much of personal discomfort to the workman, and delay in shop operations, that it is highly objectionable on this score. At first reckoning the cost of a first class roof ventilation, in comparison with the seemingly inexpensive ventilation obtained through the opened window, may appear like an unnecessary expense, but the developments of time will show the economy of the former.

In connection with heat and ventilation must be considered the question of light. The real value of light is expressed in the Divine command, "Let there be light," etc. In the paint shop it is a paramount issue; the chief factor in the greatest trinity of shop necessities, deprived of which the paint shop is a derelict on the remorseless sea of business enterprise.

It is a great pity, and the cause of a large share of unprofitable business, that so many paint shops are dark and dismal, retarding shop operations and the drying of paint and varnish, handicapping, in fact, the whole line of paint shop activity.

Light is an active drying agent, a promoter of health and comfort, and a powerful aid in abstracting profits from the bottomless pit of present day competititon. Let there be more light!

Michigan Concerns in New Quarters

The three story brick block at the corner of Tilden street and Genesee avenue, Saginaw, Mich., has been purchased by the Norris Automobile Co., of that city. Two of the four stores on the ground floor are already occupied by the Norris Co., and they will fit up a repair shop and charging station in the rear and make other improvements.

Spacious new quarters in the Thum Building, Louis and Ottawa streets, Grand Rapids, Mich., have been leased for a term of years by the Michigan Automobile Co., of that place, and will be occupied at once. They have been fitted up to conduct a general sales and garage business in the most approved style. The garage will house 100 cars.

The Jeweler Spins a Yarn.

You "pays your money and you takes your choice"—providing you have bank notes in your purse and stocks and bonds in your strong box—between a $7,000 miniature automobile studded with jewels and one of the "really" kind that will carry you instead of you carrying it. This latest gee-gaw is described by a jeweller as having been "very popular this season among that class which has more money than it knows how to spend."

He took from a little satin-plush box a miniature automobile, about an inch and a half long, and sent it spinning across the show case. It struck two or three other articles of jewelry, and, in true automobile style, bowled them over.

The little automobile was perfection in manufacture. The frame, made of platinum, had not a part missing. The hubs of the little wheels (the wheels being not much larger in diameter than a pencil) were diamonds; diamonds ran along the sides of the seats, and the seats themselves were made of several rubies forming a radiant, though hard, cushion. The lamps were a ruby and an emerald on either side, and a diamond in the center of the dashboard. On the back of the automobile was a pin by which to attach it to the neck of the dress.

The price on the tag was $7,000.

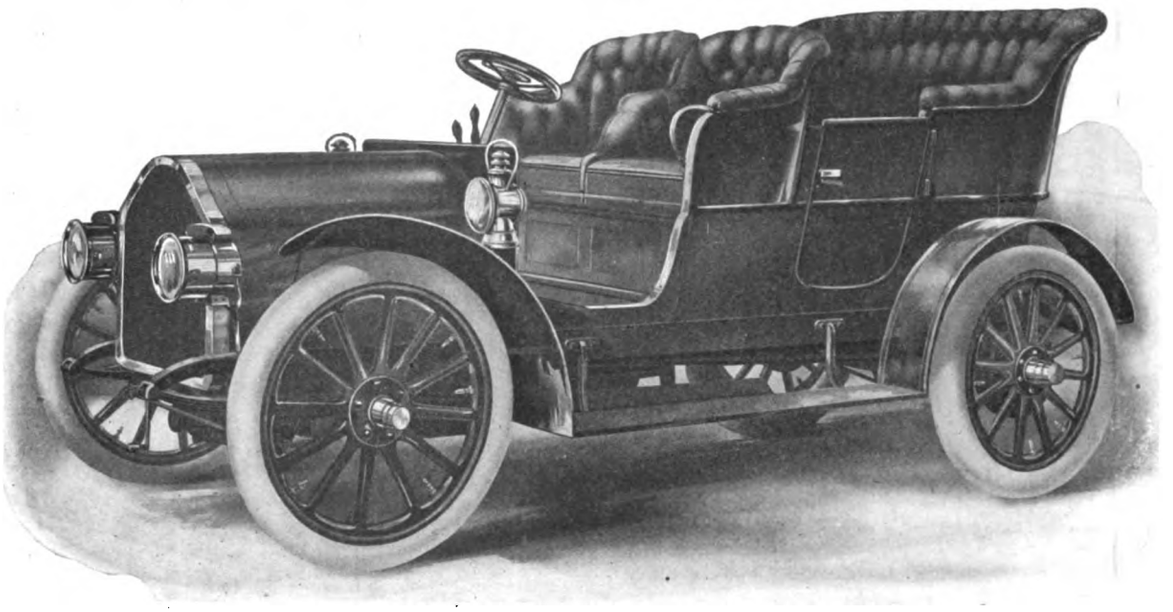
How They Help Their Workmen.

To enable their workmen to live outside the city, the big chocolate making firm of Stollwerck's, Cologne, have hit upon a happy idea. Some time ago the firm erected a number of model dwellings in the country, but they nearly all stood empty, as the distances to and from the factories were too great in most cases for the men employed. The firm owns two heavy electric trucks, and these were fitted out with covers and canvas sides, which transformed them into large and convenient omnibuses, as seats were already provided. These two wagons are now sent down early every morning to the little colony, where they collect the men and convey them to the works, and take them home again at night. Punctuality is enforced, as the men who are not ready on time have to trudge the best part of the way on foot. As soon as the wagons reach the factory they are stripped of their accessories and perform their ordinary duties. Thanks to this idea, the colony is now fully occupied, and further buildings are being erected.

Here's the Circus Car.

An Englishman named Livet claims to be the inventor of an automobile that can turn somersaults without injuring the occupants of the car. An ordinary machine is fitted with a pair of steel rockers running parallel and in a curve overhead from the front to the rear wheels. The inventor says that upsetting in his car is impossible, and that the machine can run over any embankment and turn a complete somersault with ease.

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ORIENT TOURING CAR.

Model de Luxe, 20 Horsepower. $2250.

This advertisement is written and published primarily for the benefit of those dealers who did not go to the New York Show.

Those who were there and saw the Orient cars know, better than we could tell them, the reasons why we have already closed with a large number of the very best dealers in the country.

If you did not go, we want you to know, as they know, just why the Orient Touring Cars stood out, head and shoulders, above any other cars in their class.

We want you to know that in beauty of design and finish, in perfection of engineering detail and in all around selling qualities, they ranked, in the opinion of experts, in a class with cars quoted at three thousand to five thousand dollars.

We want you to realize that the Orient de Luxe Touring Car looks every inch an imported, five thousand dollar machine—yet sells for $2250—that the Orient Model F, Light Touring Car with Tonneau ($1650) is the only car of 16 horsepower (or less) in America, having 4-cylinder, vertical tandem engine, Positive Air-Cooling, direct drive, sliding gear transmission, and three forward speeds and reverse.

Furthermore—we want you to realize that no line is complete this year without air-cooled cars—and that the Orient from every standpoint is *the* air-cooled car. It is made by the Waltham Company—and you know what "Waltham" means in fine machinery.

If we can get these facts before you clearly, you will sell Orients this year—unless the other man gets them first. And you will be helped by the biggest advertising and selling plan (combined) ever invented.

Write for details and illustrated catalogue.

TOURING CARS.		BUCKBOARDS.	
Touring Runabout,	Model E, 16 H. P., $1500	Buckboard,	Model A, 4 H. P., $375
Light Touring Car, with tonneau,	Model F, 16 H. P., $1650	Surrey,	Model B, 4 H. P., $450
Touring Car,	Model G, 20 H. P., $2000	Runabout,	Model C, 4 H. P., $475
Touring Car,	Model de Luxe, 20 H. P., $2250	Tonneau,	Model D, 4 H. P., $525

WALTHAM MANUFACTURING CO.,

Members of Association of Licensed Automobile Manufacturers.

Sales Office for New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Florida and Georgia.

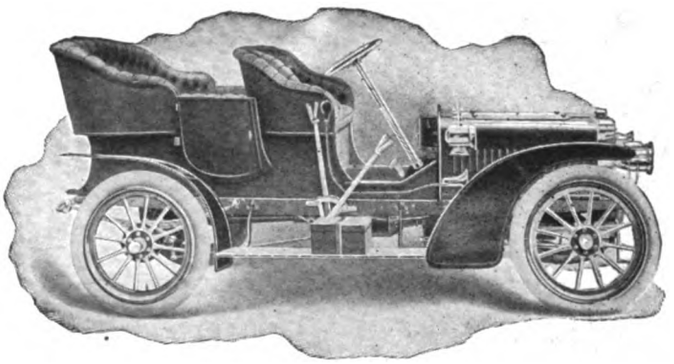
44 Broad St., New York City.

Factory and General Sales Offices:

WALTHAM, MASS.

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WAYNE MODEL B.



Catalog and Full Particulars of All Cars sent on request.

Our Agency Proposition is perhaps the most attractive in America.

WAYNE AUTOMOBILE CO.,

Dept. Q, DETROIT, MICH.

NEW YORK AGENCY:
Wayne Auto Agency, 308-310 W. 59th St.

BOSTON AGENCY:
Walter C. Masters, 14 and 16 Columbus Ave.

CHICAGO AGENCY:
McDuffee Auto. Co., 1449 Michigan Ave.

MILWAUKEE AGENCY:
The Milwaukee Auto Supply & Engine Co., 706 Winnebago St.

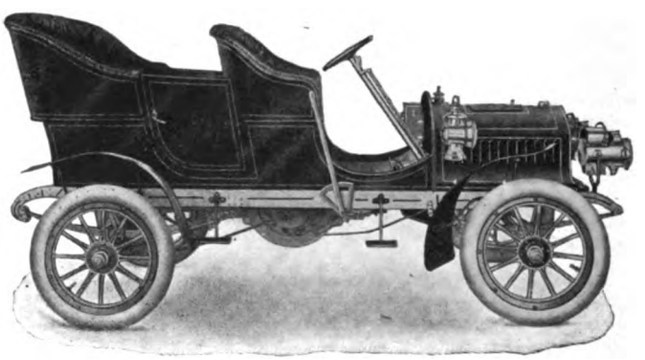
A 4-Cylinder 24-28 H. P. Touring Car for $2,000.00.

Every feature of excellence found in the highest price 4-cylinder cars at about half the cost. Sliding gear transmission, direct drive, 102-inch wheel base, weight only 1550 lbs., side entrance tonneau and fewer moving parts than any 4-cylinder car made.

MODEL C. Double-Opposed Motor, 16 H. P., side entrance tonneau, wheel base 90 inches. Price, $1250.

MODEL A. Same as Model "C," except that the tonneau is detachable, enabling the car take the place of a Runabout. Price, $1200.

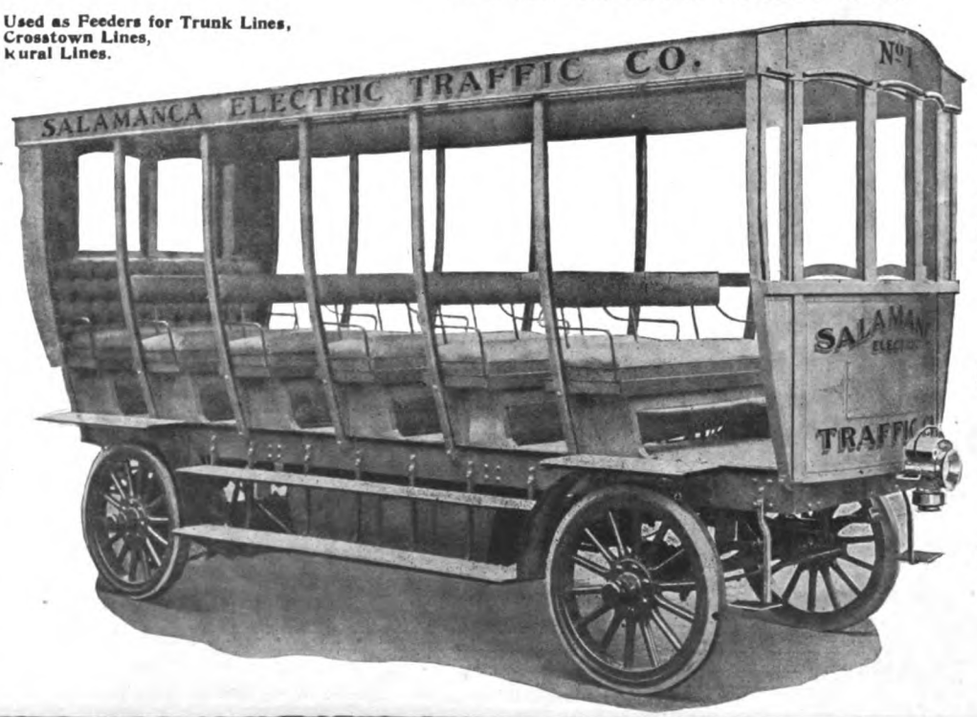
MODEL C.



TO MEET THE POPULAR DEMAND—1905.

THE AUTOMOBILE STREET CAR.

Used as Feeders for Trunk Lines, Crosstown Lines, Rural Lines.



Built by

The Auto-Car Equipment Company,

Makers of

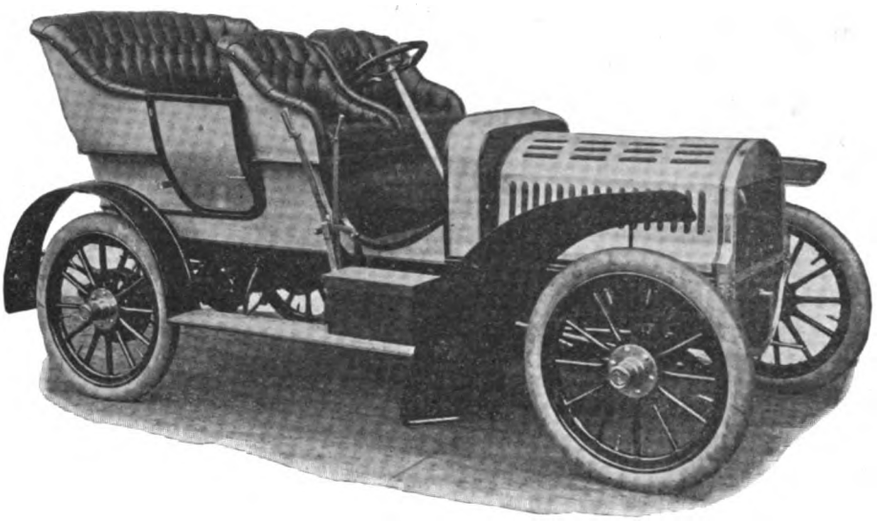
Commercial Vehicles,

BUFFALO, N. Y., U. S. A.

Trucks, Delivery Wagons,
Omnibusses,
Sight-seeing Cars,
Trackless Trolley Cars.

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NO HOT AIR
ABOUT THE
Frayer-Miller Air-Cooled Car.



The only air-cooled car on the market that looks like a *real* automobile and *is* one.

Contains more ingenuity to the square inch than any car in the world.

LIGHTEST

24 H. P.; 1,650 pounds.
Aluminum used wherever possible.

SIMPLEST.

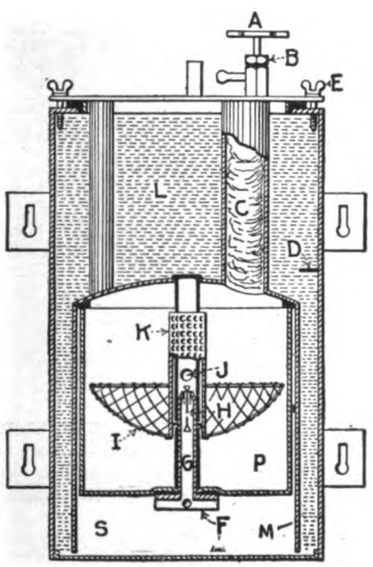
No water tanks.
No radiators.
No pumps.

MOST MECHANICAL.

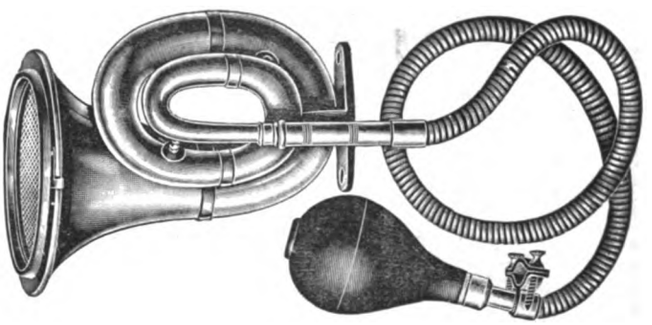
Cooled by *Controlled* air.
Air when you want it and in proper volume.

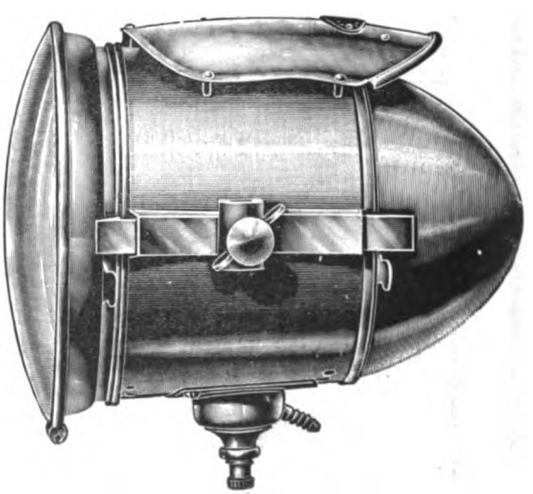
These few points are merely a hint of the wealth of goodness incorporated in the most modern car ever built. See it for yourself at the New York Show, Exhibition Hall, Block A. We will be glad to explain the other good points in detail.

THE OSCAR LEAR AUTOMOBILE COMPANY, COLUMBUS, OHIO



Autolyte Lamps and Generators.





IMPORTED HORNS, SPARK PLUGS, GOGGLES, Etc.

Send for Catalogue.

A. H. FUNKE,

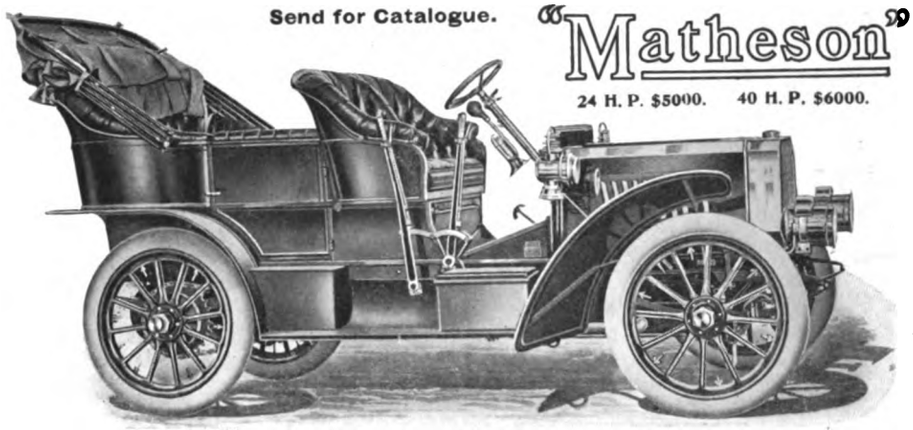
83 CHAMBERS STREET, NEW YORK.

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Send for Catalogue.

"Matheson"

24 H. P. $5000. 40 H. P. $6000.



"America's Finest Motor Car."

CHARACTERISTIC FEATURES.

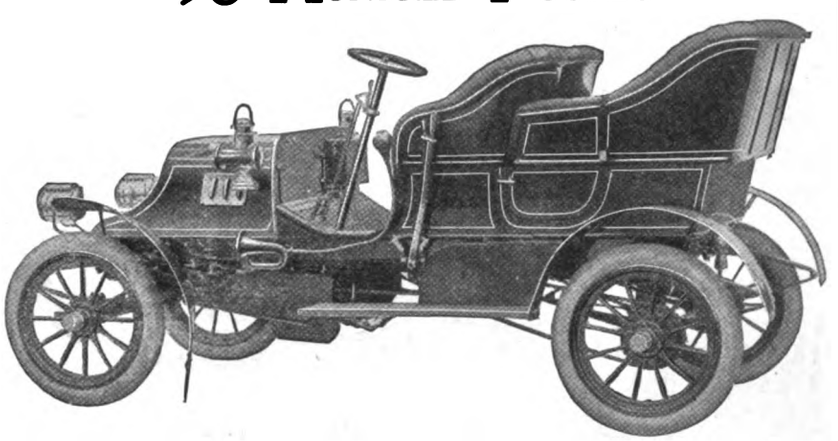
Self-starting from the seat.
Practically Noiseless.
Absence of Vibration.
Four-cylinder Vertical Engine.
Valves, in the head.
Automatic Carburettor, never requires adjustment.
Automatic Speed-Control, by Governor.
Automatic Lubrication.
Single-Lever Control.
"Make-and-Break" Ignition.
Irreversible Steering-Gear.
Four Powerful Brakes.
Timken Roller-Bearings.
Armored Frame.
Road Clearance of 12 inches.
Side Entrance.
Aluminum Body.
Wheel Base, 106 inches.
Imported "Continental" Tires.
Imported Honey-Comb Radiator.
Long Life—Insured by using greater factors of safety in every vital part than ordinarily employed.
Speed—Guaranteed 40 to 60 miles an hour, according to H. P. and gear.

MATHESON MOTOR CAR CO., - Holyoke, Mass.

N. Y. Agents, Shepard Bros., 500 Fifth Ave

THE MARION CAR

16 HORSE POWER
HUNDRED POUNDS



Built to Run and Last for Years

Air cooled 16 H. P. vertical motor, 4 cylinders, 4" stroke, 4" bore. Side entrance detachable tonneau. Double chain drive. High road clearance. Long wheel base (96" inch). Full elliptic springs, guaranteeing ease and comfort on the road. Simple control and powerful brakes. Complete equipment. Finish of the highest possible quality. Price complete, with tonneau, $1,500.

MARION MOTOR CAR CO. Indianapolis Ind.

New York, cor. 38th Street and Broadway.
Denver, 1558 Broadway.
Chicago, 1337 Michigan Ave.
Boston, 147 Columbus Ave.
St. Louis, 47th and Olive Sts.

SEE US AT
EXHIBITION HALL, NEW YORK

IT HAS THE FIELD TO ITSELF.

THE YALE

AT $1000.00

Does it sound like exaggeration to say that the Yale at $1000.co has the field to itself? Stop and study the situation for a moment and you'll see that there's no exaggeration about it. Here's a Touraround developing 14 to 16 H.P. which goes like a flash without jolt or jar and slows and stops at the crook of a finger; a car which luxuriously seats five people and rides as easy as a leather rocker—is there anything even approaching it in America at $1000?

Send for Literature and See.

KIRK MFG. CO., 972 Oakwood Ave., - - - Toledo, Ohio.

Members Association of Licensed Automobile Manufacturers.

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YOU CAN'T AFFORD to MISS IT.

THE

PREMIER AIR-COOLED



"The Quality Car."

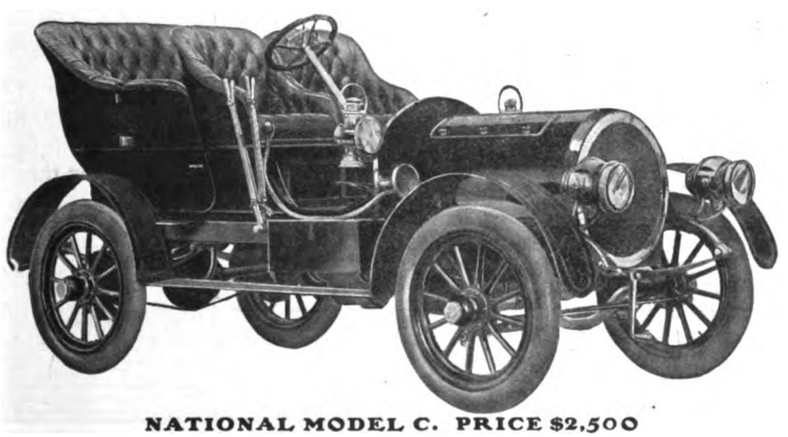
Chicago Show,

February 4 to 11.

Spaces

120 and 121.

PREMIER MOTOR MFG. CO., - Indianapolis, Ind.



NATIONAL MODEL C. PRICE $2,500

National MODEL "C"

"GOES THE ROUTE"

With NATIONALS You

LEAD - - OTHERS FOLLOW

Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
Five lamps, Generator and horn.
Tires, 34 x 4. Positive oiling.
Luxuriously upholstered in leather.
Governor. Duplex throttle control.
Four cylinder 4¼ x 5 vertical.
Bevel gear drive.

Double ball bearing slide gear transmission—direct on high.
Hardened steel gears.
Gear driven commutator.
Rear wheels revolve on double ball bearings on outside axle tube.
All weight taken off inner axle and differential.
Spherical drive case.
Internal expanding metal to metal brakes.
Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905

National Motor Vehicle Co.,

1007 E. Twenty-Second St., Indianapolis, Ind.



WRITE NOW. NEW YORK SHOW SPACE. Q.

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Are your eyes bothering you? Do they ache and pain you? Do they look red and feel hot? Are you troubled with headache and neuralgia? Does it hurt you to read or sew, or use the eyes steadily?

Then don't waste another hour, but get EYE-FIX, the only sure and painless cure for all eye troubles. It never fails to give instant relief, and as it contains neither cocaine, atropine, belladonna or other dangerous elements, EYE-FIX is used universally by physicians and opticians.

EYE-FIX is good to keep the eyes well and strong. And it's the one safe remedy for every eye trouble in both young and old.

If baby's eyes are weak or sore—use EYE-FIX.

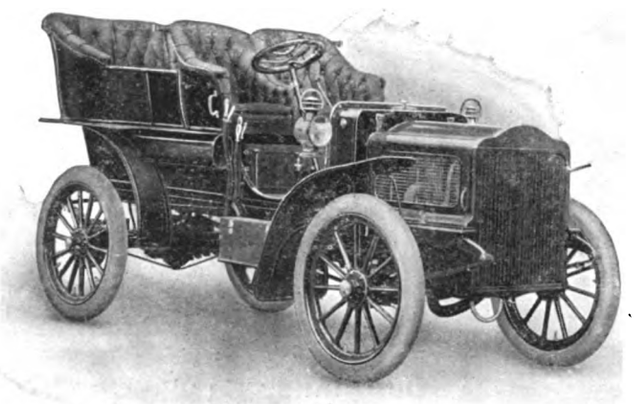
If grandfather's eyes are weak and weary—use EYE-FIX.

If your own eyes are bad from any cause—use EYE-FIX.

All druggists and opticians sell EYE-FIX at 50 cents. Ask for it and take no substitute. No other eye remedy in the world is like EYE-FIX, because no other remedy produces the same splendid results as EYE-FIX. A trial bottle for 10 cents will be sent you direct from our laboratory. Eye-Fix Remedy Co., Detroit, Mich. Dept. S.

The INCOMPARABLE WHITE

THE CAR FOR SERVICE



Concerning the 1905 White.

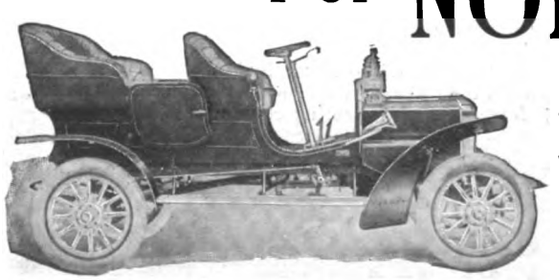
The conservative English authority, the *Automotor Journal*, in a recent issue said:

"The new car is, in our opinion, quite as far superior to the 10 H. P. model as that model was to its prototype." * * *

"Silent as have been the earlier models, yet this 15 H. P. car is even more completely so; small as has been their water consumption, yet the efficiency now attained in this respect is even more remarkable; and easy as they always have been to manage, yet the control of this larger model is easier than ever."

WHITE SEWING MACHINE COMPANY, CLEVELAND, OHIO.

For NORTHERNS



Northern Touring Car, $1,700.

in

NEW YORK,

See

Peter Fogarty,

142 West 38th Street.

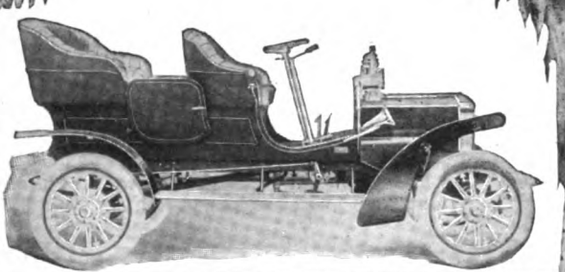


Northern Runabout, $650.

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NORTHERN AUTOMOBILES

Good in all Climes





SILENT AS THE SNOW

is the operation of the Northern Touring Car. The plans of this superb vehicle called for the elimination of all noise and vibration, and every part has been carefully worked out with this end in view.

That the result aimed at is fully attained, the car itself proves.

THE NORTHERN TOURING CAR IS THE QUIETEST, EASIEST RUNNING CAR IN THE WORLD.

The motor is a 5¼x5¼ two-cylinder of the opposed type, developing ample power to take the car anywhere an automobile can go. Wheel base is 100 inches, with wheels fitted with 30x4 detachable tires. Choice of four different bodies. **Two-passenger** body, a powerful, speedy machine, **$1,500. Four or five passenger,** rear entrance, **$1,600,** and **four or five passenger,** side entrance, $1,700; and, lastly, a superb Limousine body, **$2,500.** All styles interchangeable.

WRITE FOR CATALOG 16.

THE "STURDY NORTHERN" RUNABOUT

long ago justified its name. With ample reserve power, strongly built and with body hung on swivel entirely independent of the frame, rough roads and smooth roads are alike, so far as riding qualities go. Its record in the hands of thousands of users all over the country proves its durability and efficiency under all conditions.

THE 1905 NORTHERN RUNABOUT, grown in everything except price, embodies all the features suggested by experience and the advancement of the art of automobile construction. Among the improvements are new body design, larger fenders, larger oil cups, full back moulded seats and numerous detailed refinements of working parts.

Largely increased facilities make it possible to now offer this sturdy, ideal **"Runabout" at $650.**

It will pay you to get in touch with NORTHERN Automobiles.

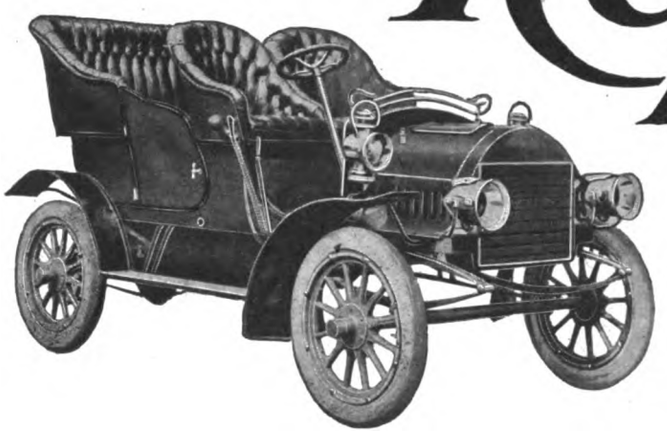
NORTHERN MANUFACTURING Co.

DETROIT, MICHIGAN.

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If you missed the New York Show, meet us at Detroit or Chicago . .

Reliance DETROIT



"No Noise About It but the Horn."

16 h. P. (and lots to spare); weight, 1,750 lbs.; speed, 45 miles (if you want it); price, complete, ... $1,250

EASY SELLERS, because people who know Automobiles can see at first glance that the Reliance is a good car, while novices pick the Reliance because it "looks good to them" for the money; in fact, with purchasers of any class it's "the car too good for the price."

Reliance Transmission is the sliding-gear type, "too costly" for other manufacturers. Works the same over all kinds of roads, requiring no attention to keep it adjusted and thoroughly lubricated, something you cannot say of any other car at anything like the money.

Simple pedal control, both hands free; all speeds without touching gear levers, giving absolute control on the direct drive in tight places; saving on the nerves. Easy for women to operate; no strength required. Easiest riding car now built at any price. Finest finish and upholstery that can be produced. Smart body with luxurious tonneau for three persons, and COMFORTABLE side entrances. Wonderful hill climber.

We build it all ourselves; we KNOW it's right.

One hundred cars ready Feb. 1. We have a system of guaranteeing deliveries. Write now for our special terms.

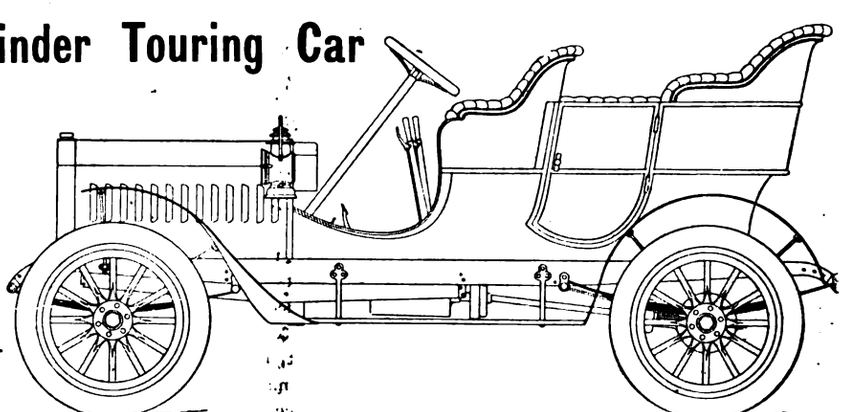
RELIANCE MOTOR CAR CO., - Dept. B, Detroit, Mich., U. S. A.

The Pungs-Finch 4-Cylinder Touring Car

Motor—Four cylinders, 20 H. P.
Sliding Gear speed change.
Three forward speeds and reverse.
Bevel Gear transmission to divided rear axle.
Wheel Base, Model D. 80 inches.
Model F. 97 inches.
Tires, Model D. 30 x 3½.
Model F. 32 x 3½.
Weight, Model D. 1,750 lbs.
Model F. 1,825 lbs.
Side or rear entrance tonneau, seats four or five passengers.

PRICE:—

Rear Entrance Tonneau, Model D. $1,700.
Side Entrance Tonneau, Model F. $1,850.



MODEL F.
See our Exhibit in Basement at N. Y. Show.

EXPERIENCE: Fifteen years ago the Sintz Gas Engine Company built a practical and successful automobile that covered thousands of miles and was ten years in advance of the times. Constant study and years full of valuable, practical experience in the building of thousands of Gas Engines, are the secret of our ability to produce a reliable Touring Car for $1,700.

Send for full description of this up-to-date car.



We build Practical, High-Speed Auto Boats and Yachts, Marine Gasoline Engines, both two and four-cycle—one to four-cylinder, from 2½ to 100 H. P. Fifteen years' experience. Send 10c. for large Marine Catalogue.

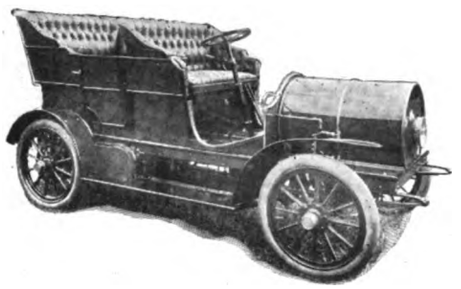
PUNGS-FINCH CO., Detroit, Mich.

Successors to { SINTZ GAS ENGINE CO. / MICHIGAN YACHT & POWER CO.

New York Representative, DUERR-WARD & CO.

Chicago Representative, WILSON MOTOR CO.

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PRICE, $1500.

THE EXCELLENT

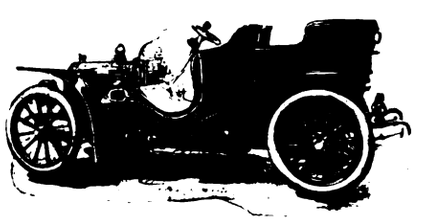
GROUT

No Noise. No Vibration. Will not Freeze in Zero Weather. Climb Any Hill. Speedy, Reliable. Simple in Operation.

GROUT BROS. AUTOMOBILE CO.,
287 Main St., Orange, Mass.

BOSTON BRANCH: 151 Columbus Ave.

The American Mercedes.

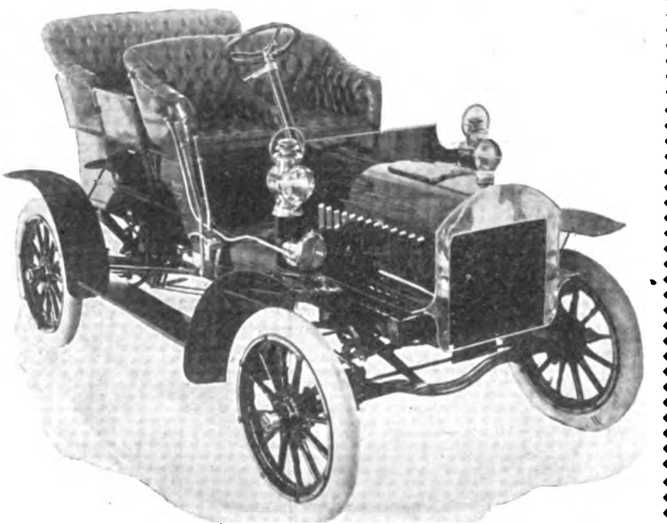


A faithful reproduction of the 40-45 h. p. Mercedes, built by our parent company, the Daimler Motoren Gesellschaft, formerly of Cannstatt, now of Unterturkheim, Germany.

Heretofore no American builder has been able to duplicate the materials used in the higher-powered foreign cars. We are doing it. Our booklet tells how.

Address DAIMLER MANUFACTURING CO.,
955 Steinway Ave., Astoria, L. I.

The 1905 Logan.



20 H. P. 1620 Lbs.

SLIDING GEAR TRANSMISSION

(no gears in action on high—runs in oil—impossible to strip gears when shifting),

AND OUR

EQUALIZED SPRING TRUSSED FRAME

(which does away with all jolt and jar of a rough road),

ARE ONLY

Two Features of Many

THAT MAKE

The Logan

"THAT CAR OF QUALITY"

Price, $1600.

See us at New York Show, Space B.

Logan Construction Co.,

CHILLICOTHE, OHIO.

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EXHIBITORS AT THE IMPORTERS SALON

The IGNITION PROBLEM is SOLVED in the

"LACOSTE" HIGH TENSION MAGNETO

for JUMP SPARK IGNITION



We Guarantee this Device to be
ABSOLUTELY PERFECT

We have done the experimenting

NO BATTERIES, NO COIL
NO COMMUTATOR

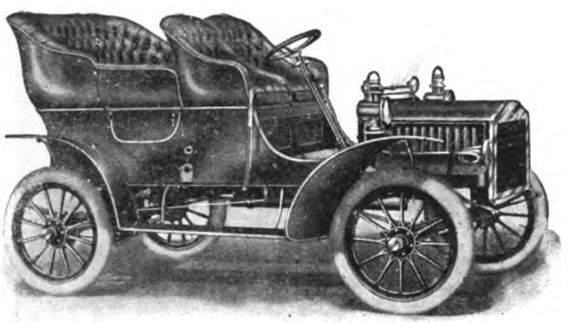
See it at the
IMPORTERS' AUTOMOBILE SALON

Everything for Electrical Ignition

LEON RUBAY

140 W. 38th ST., N. Y. **SOLE U. S. AGENTS**

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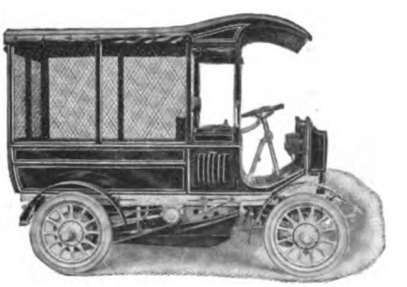
Auto Rims.

OUR RIMS ARE SEEN IN EVERY SPACE
IN COLORS DARK AND LIGHT;
THE REASON IS—YOU NEED NOT QUIZ,
BECAUSE WE MAKE THEM RIGHT.



Our Inspection Mark.

It Stands For Good Quality.



NO STRONGER WHEEL
FOR AN AUTOMOBILE
CAN BE MADE THAN WHEN BOUND
BY STANDARD RIMS OF STEEL.

STANDARD WELDING Co.
CLEVELAND OHIO





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SPLITDORF IGNITION

For 1905 surpasses everything heretofore seen in the market.

Look over our line at the New York and Chicago Shows.

C. F. SPLITDORF, 17-27 VANDEWATER STREET, NEW YORK, N. Y.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This new edition of this handsomely bound and artistically printed book, containing illustrations of about 125 gasolene cars, will be ready for mailing about Feb. 1st, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

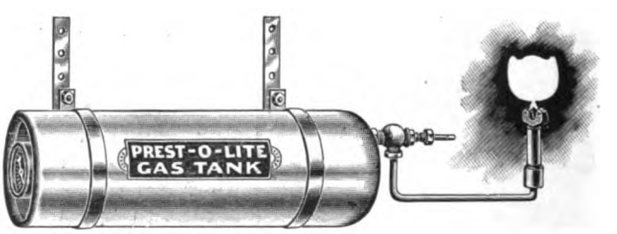
The 1904 edition is now out of print.

Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

The Prest-o-Lite Gas Tank



The new system of acetylene lighting for automobiles and launches. More than 1,000 Prest-o-Lite Tanks sold since September 1st. More than 100 of the best agents in America have placed orders for Prestolite Tanks.

TEN THOUSAND Tanks will be sold in 1905. The wide-awake dealers are signing up agencies now. Write us for catalogue and full information.

The Concentrated Acetylene Co.

INDIANAPOLIS, IND.

New York Show Space, 52. Chicago Show Space, 326.

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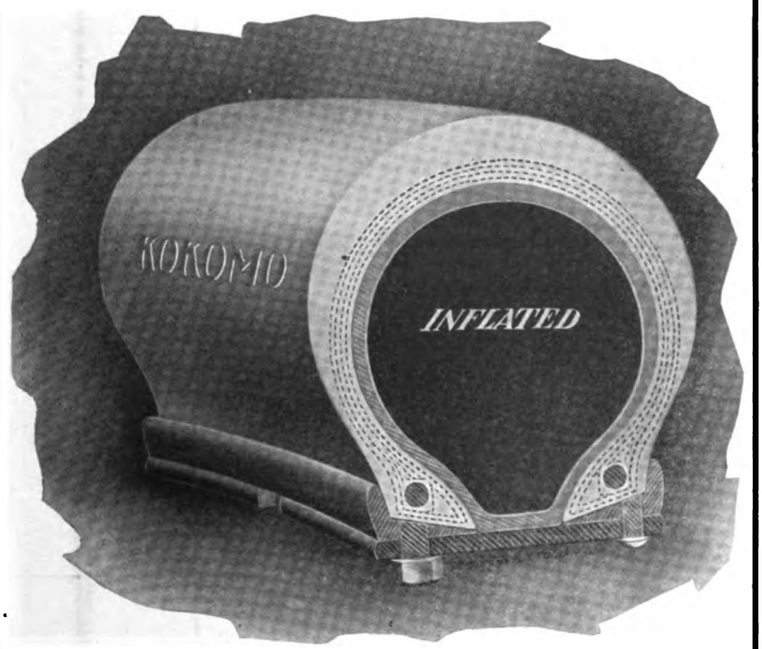
— THAT ETERNAL QUESTION —

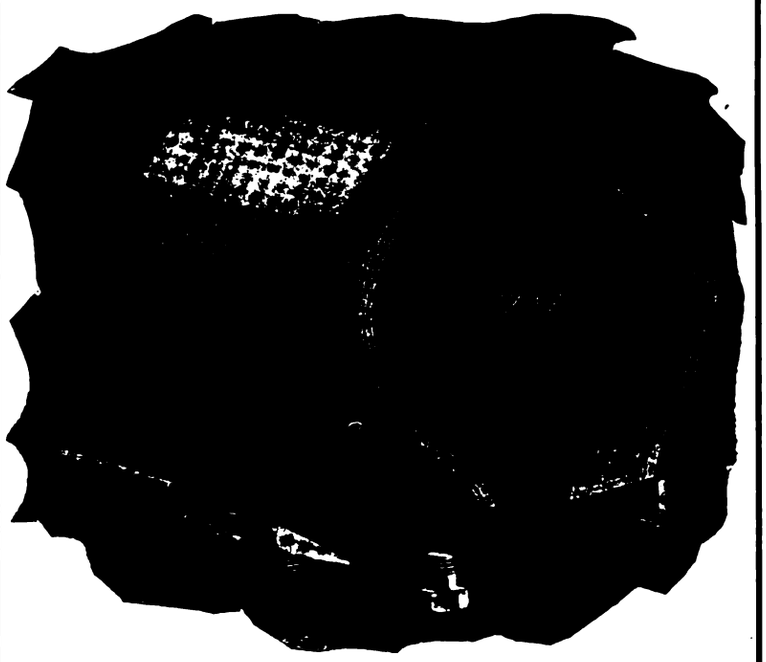
— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and "Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Tread

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

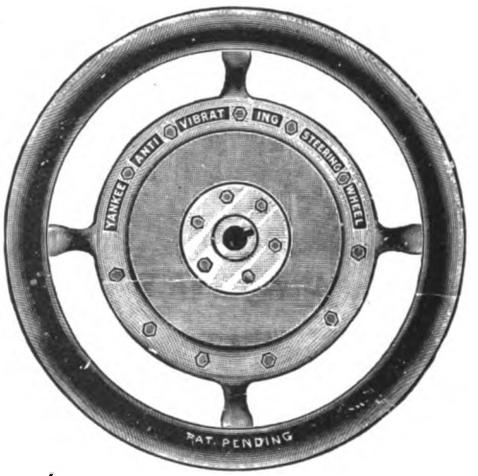
Prices and other particulars on application

KOKOMO RUBBER COMPANY, - Kokomo, Ind.

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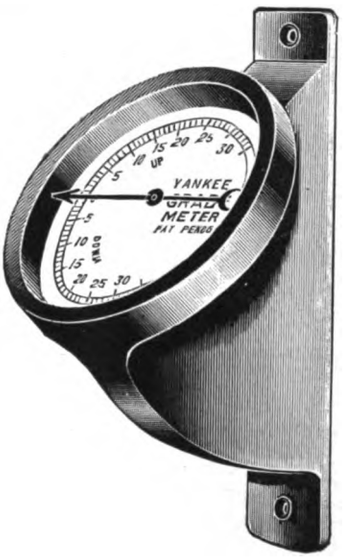
WHOLESALE RETAIL

Largest Manufacturer of Auto Specialties in the World



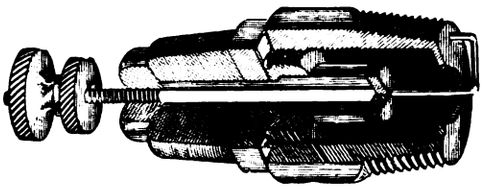
1905 Yankee Non-Vibrating Steering Wheel
Price, $10.00

Takes up all the vibration and at the same time has greater tensile strength for steering purposes than the old-fashioned wheel. Very ingeniously constructed. Write for descriptive circular.



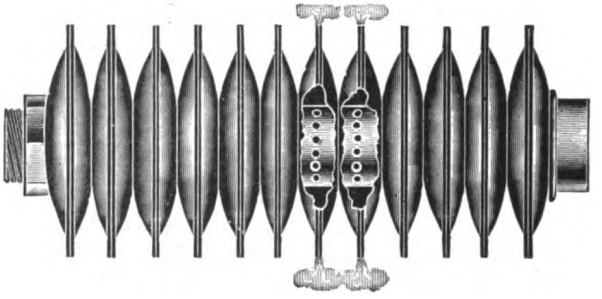
1905 Yankee Grade-Meter
Price, $7.50

This Grade-Meter is the handsomest article of its kind on the market and is positively accurate.
No vibrating of the indicating hand.



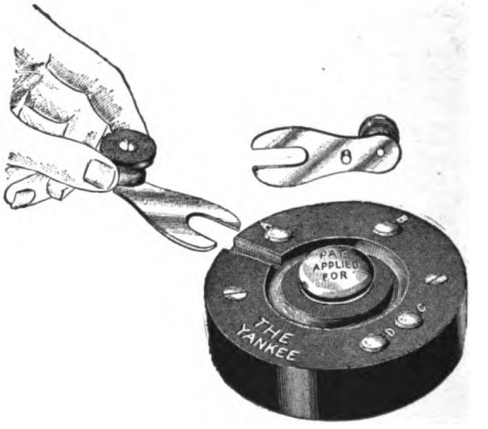
Yankee Mica Spark Plug
Closed End, $1.50 Open End, $1.00

Both guaranteed 90 days.
Thousands in use and no complaints.



Yankee Silent Muffler
Price, $6.00

Composed of 24 opposed disks enclosing escapement hole in exhaust pipe. Gas escapes through the thin outer edge of all the disks simultaneously.
The point of escapement is so many times larger than the bore of the exhaust pipe that there is no back pressure.
Equal distribution of the escaping gas over so long a line solves the muffler question.
Positively noiseless.



Yankee Cut-out Switch
Price, $1.50

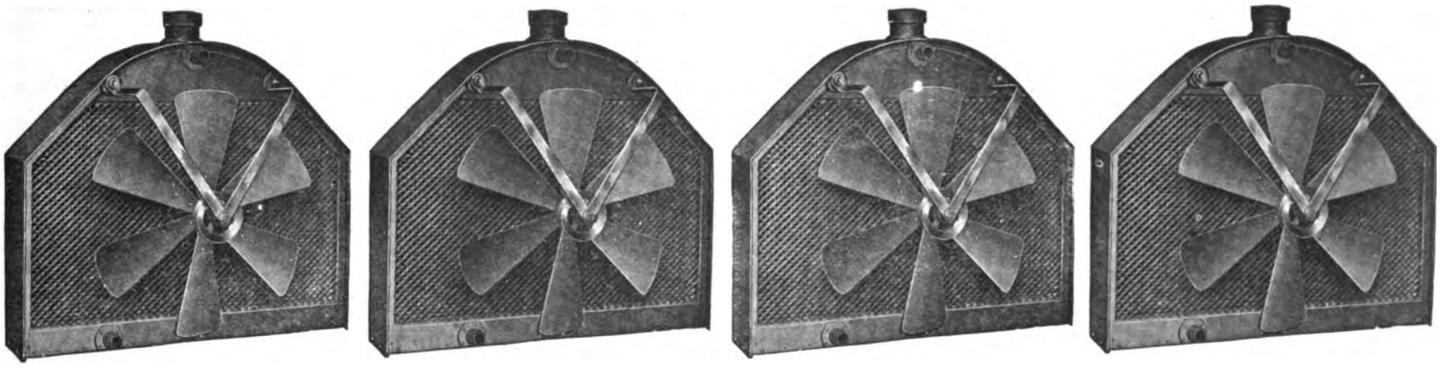
Switch blade instantly detachable which locks your car in your absence. Cannot be short circuited.
May use two sets of batteries, separately or alternately, or you may double your amperage at will.

WE ALSO MANUFACTURE

Quick Chain Repairers (sells for 50c.), Foot Bellows for Horn (sells for $3.00), Wind Shield, Price $7.50 (keeps dust out of back of tonneau), Battery Connections (sells for 36c. doz.), Repair Plasters, $1.00 each.
We manufacture 33 other Auto Specialties. Cuts furnished free to jobbers and dealers.
BIG FREE CATALOG. Discount to Manufacturers, Jobbers and Dealers.

E. J. WILLIS CO., 12 Park Place, New York

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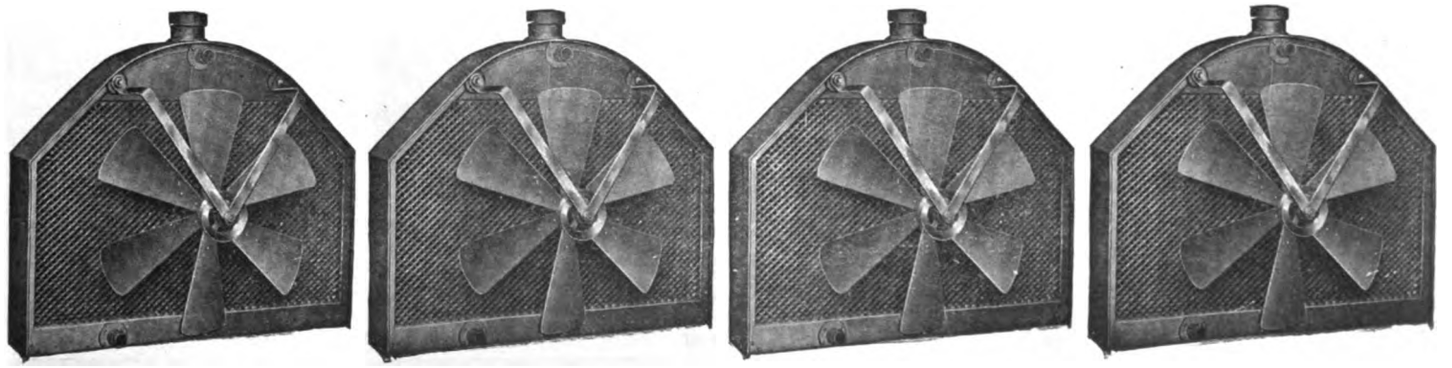
The Name
WHITLOCK
on a Cooler
is an index to the quality of the car.

Seek where you will, you will find Whitlock coolers only on those high grade cars, the reputation of which have made the reputation of the American industry.

We have manufactured
90 per cent.
of all Cellular Coolers made in the United States to date.

Exhibited at New York Show, Spaces 42-44 First Tier Boxes.

The WHITLOCK COIL PIPE CO.
Hartford, Connecticut.



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The Home of the Automobile Trade

YOU'LL FIND THEM ALL THERE.



The Breslin

B'way-29th St. New York

ALL KINDS OF GOOD THINGS TO EAT.

"THE BRESLIN,"

BROADWAY, 29th STREET.

New York's Latest and Greatest Hotel.

500 Superb Sunlit Rooms. 300 Baths.

The Breslin Hotel Co.

JAMES H. BRESLIN, President.

GEO. T. STOCKHAM, Vice-Prest. and Gen. Manager.

-THE-
CLARENDON

Seabreeze Daytona Beach Florida

A MODERN HIGH CLASS HOTEL

particularly adapted to cater to the wants of the motorist, owing to its immediate access to the greatest Speedway in the world. Spacious Garage and skilful mechanics connected with hotel.

Only two minutes from the Florida East Coast Automobile Club House. Hotel can be reached at any stage of the tide, from the beach.

Private Baths, Steam Heat, Electric Lights, Hot and Cold Water in every room.

Rates and further information upon application.

THE CLARENDON

Seabreeze Daytona Beach Florida

E. L. POTTER, Proprietor

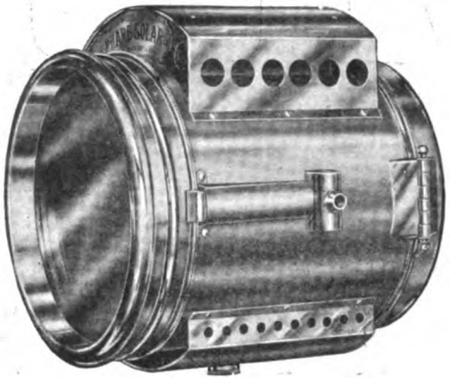
C. H. KNAPPE, Mgr.

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The FOUR POINTS OF REAL MERIT

RELIABILITY

DURABILITY



BEAUTY

UTILITY

OF

Solar Lamps

As clearly observed by all visiting "trade wise" dealers at our booth at the New York Show.

They do not need the verdict of the International Jury at the St. Louis World's Fair, by which **Solars were awarded the Gold Medal,** to convince them that the automobile drivers will insist upon Solar equipment on all 1905 cars. Be wise and meet this demand. Solar lamp equipment means "no lamp troubles" and that is what you want.

Don't fail to see our 1905 line if you visit the Show. If not, write us for samples, electros and prices.

Badger Brass Mfg. Co.

KENOSHA, ... WISCONSIN.

New York Office, 11 Warren Street.

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MIL

OLDEST AND LARGEST HOUSE IN

Reliable Goods.

ATTENTION TO ORDERS,

MANUFACTURER, JOBBER,

CHAS. E.

Home Office, 97-99-101 Reade St.,

Philadelphia Branch, 318-320 N. Broad St.

New York Retail Branch,

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LER

AUTOMOBILE SUPPLY AMERICA.

Liberal Treatment.

LARGE OR SMALL.

IMPORTER AND EXPORTER,

MILLER,

New York City, N. Y.

Boston Branch, 202-204 Columbus Ave.

Broadway and 38th St.

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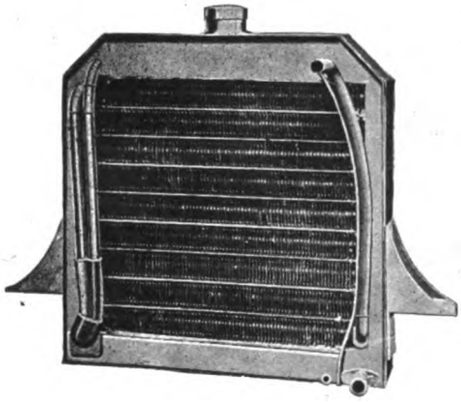


OUR EASTERN BRANCH, NEWARK, N. J.

Briscoe Radiators

need no introduction to the automobile trade. They are known everywhere as the most efficient, modern, tasty and economical radiators that can be used.

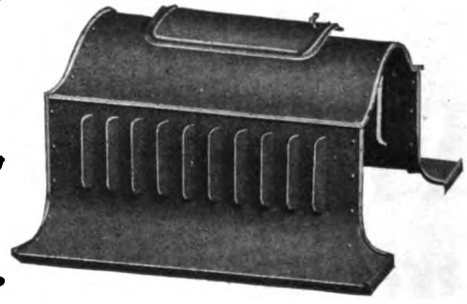
During the past season the demands on our factory were so great that we have been compelled to open a new plant at Newark, N. J., to handle our eastern trade. At the same time our Detroit factory has been materially enlarged and improved, so that in 1905, as in past years, we shall continue to make more radiators than all other manufacturers combined. This year our specialties are:



FLAT-TUBE RADIATORS,

"STAGGERED GANG FIN" RADIATORS,

HONEYCOMB RADIATORS.



All old types refined and improved. With our increased facilities and the large stock of materials which we carry on hand at all times, we are prepared to make prompt deliveries.

BRISCOE HOODS, FENDERS, TANKS, ETC., ARE STANDARD.

See us at the Shows.

NEW YORK SHOW—Space V, Elevated Aisle. CHICAGO SHOW—Spaces 187-188, Balcony.

DETROIT SHOW—Space G-4, Balcony.

Write for Catalog and full particulars.

BRISCOE MFG CO.

Main Office, Detroit, Mich. Eastern Branch, Newark, N. J.

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See New York Automobile Show.

Acetylene Gas, Portable Lamps, Generators and Storage Cylinders.

20TH CENTURY LIGHTS FOR AUTOMOBILES.

Acetylene Gas, House and Town Plants.
See us about Lighting your Country Homes.

NEW LAMPS Aluminum (parabola) reflector and mirror lenses with contained or for separate generators.

NEW GENERATORS Improved automatic water-drip system, various sizes and prices. **Entirely new patented carbide feed** (dropping carbide into water), **a steady, safe and sure generation.** No generation only when wanted—No waste of carbide, etc. The cleanest of all generators—Be sure to see this—It is certain to have a large sale.

NEW STORAGE CYLINDERS **Operated exclusively by us under license from the Commercial Acetylene Co.** An absolutely safe, sure, clean system, giving unvarying light, and as many lights from one cylinder as wanted. Always ready—Various size cylinders—Burns from 14 to 80 hours. Tanks re-charged at small cost. A very important matter for special consideration.

20th CENTURY LAMPS, ALL SIZES HORNS, OIL GUNS. See 20th CENTURY 1905 CATALOGUE.

A FULL EXHIBITION ALWAYS at the Offices of 20th CENTURY MFG. CO., 19 Warren Street, New York.

Chicago Automobile Show

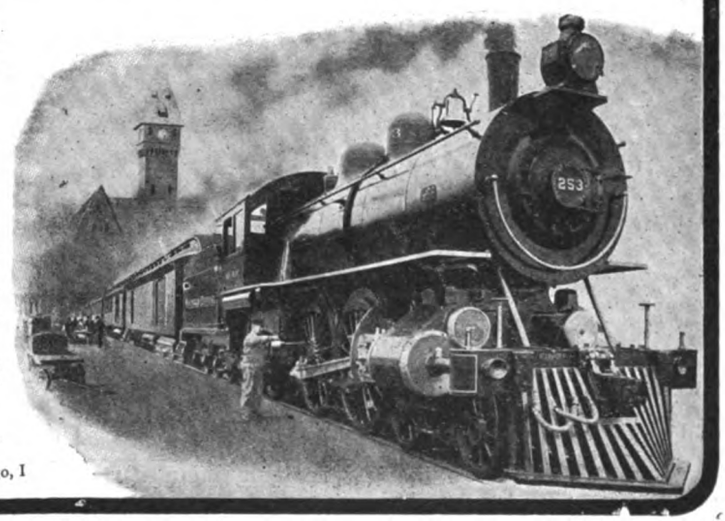
February 4th to 11th, 1905.

In making your transportation arrangements to attend above show consider the fine train service of the

MICHIGAN CENTRAL
THE NIAGARA FALLS ROUTE

Several fast trains daily carrying through sleeping and dining cars between Boston, New York and Chicago.

For full information and folders inquire of ticket agents or write
W. H. UNDERWOOD,
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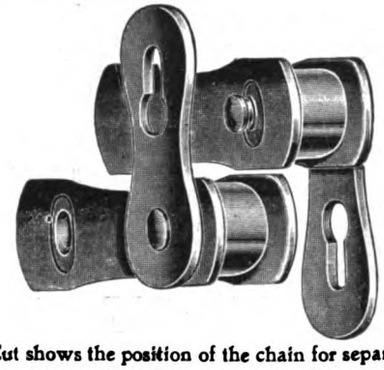
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BALDWIN STANDARD CHAINS.

ALWAYS IN ADVANCE IN DESIGN AND QUALITY.



PATENT PENDING.



This Cut shows the position of the chain for separating it.

Our new detachable chain cannot separate by accident nor when broken. It is as firm as a riveted chain.

Our Riveted Chain for 1905 also has new features. There are no square edges for the sprocket tooth to wear against. They make for QUIET and SMOOTH RUNNING. THE BALDWIN WAY is the SMOOTH WAY.

For full description send for our Annual No. 7.



PATENT PENDING.

BALDWIN CHAIN & MFG. CO.,
Worcester, Mass.

PETERSON & DRAPER, 166 Lake St., Chicago, Ill., Sales Agents.

ACME AUTO SUPPLY COMPANY

CLEVELAND, OHIO.

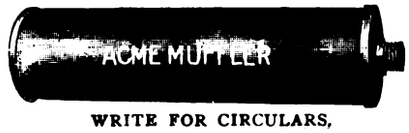
ACME TONNEAU DUST SHIELDS.



Made to fit any style car. Rolls up like a curtain.

ACME MUFFLERS.

MARINE,
AUTOMOBILE,
MOTOR CYCLE,



LIGHT,
SILENT,
NO BACK PRESSURE.

WRITE FOR CIRCULARS,

A. L. DYKE, St. Louis, Southern Agent.

MANHATTAN STORAGE CO., New York, Eastern Agents.

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Another Tribute to Goodrich Superioritv.
Goodrich Records Prove Goodrich Goodness.

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"Swedoh" Spring Steel Rims

all bear this trade mark:

TRADE MARK

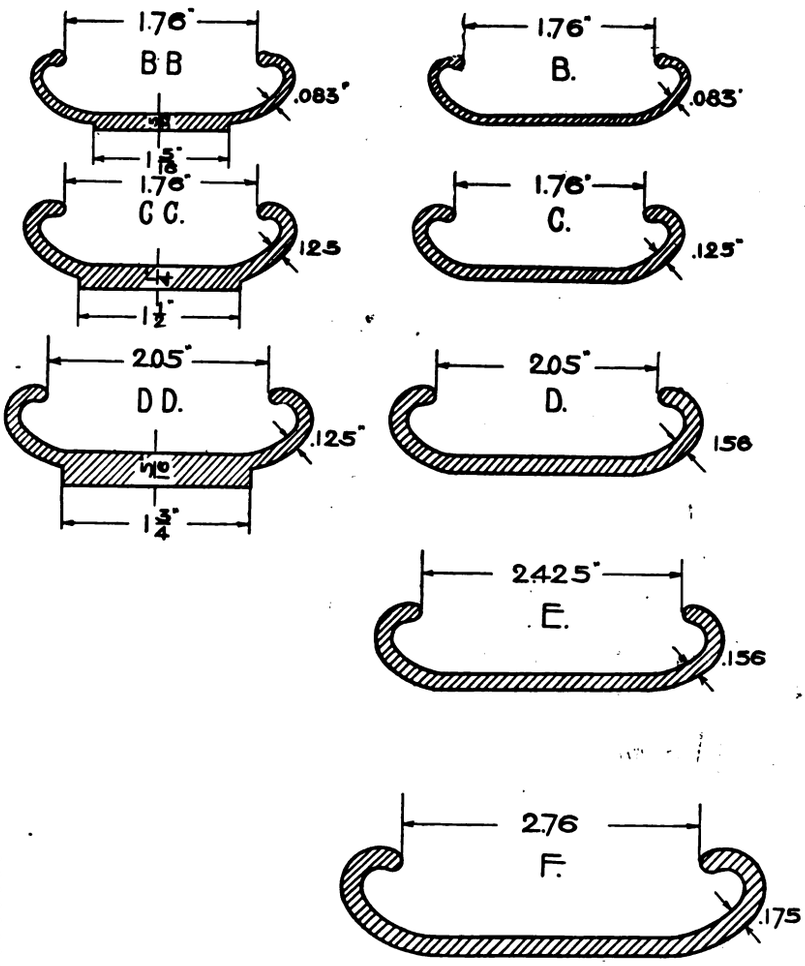
LABEL COPYRIGHTED.

The official stamp of approval of the tire makers denoting that **"Swedoh" Spring Steel Rims** fit all standard detachable tires

"TRUE AS ('Swedoh') STEEL"

has an added significance when applied to rims, meaning **A TRUE CIRCLE OF STEEL THAT STAYS TRUE.**
See that they are on all your automobiles.

Rims for Wire Wheels. Rims for Wood Wheels.



CLINCHER RIM MEASUREMENTS.

Size.	Rim Section.	Inside Diameter of Rims for Wood Wheels.	Diameter of Rims at Tire Seat for Both Wood and Wire Wheels.
26x2½ in.	B.	20.834 in.	21 in.
*28x2½ " interchangeable	"	21.834 "	*22 " interchangeable
*30x2½ " "	"	23.834 "	*24 " "
32x2½ "	"	26.834 "	27 "
34x2½ "	"	28.834 "	29 "
36x2½ "	"	30.834 "	31 "
26x3 "	"	19.834 "	20 "
*28x3 " interchangeable	"	21.834 "	*22 " interchangeable
*30x3 " "	"	23.834 "	*24 " "
32x3 "	"	25.834 "	26 "
34x3 "	"	27.834 "	28 "
36x3 "	"	29.834 "	30 "
26x2¼ "	C.	20¾ in.	21 "
*28x2¼ " interchangeable	"	21¾ "	*22 " interchangeable
*30x2¼ " "	"	23¾ "	*24 " "
32x2¼ "	"	26¾ "	27 "
34x2¼ "	"	28¾ "	29 "
36x2¼ "	"	30¾ "	31 "
26x3 "	"	19¾ "	20 "
*28x3 " interchangeable	"	21¾ "	*22 " interchangeable
*30x3 " "	"	23¾ "	*24 " "
32x3 "	"	25¾ "	26 "
34x3 "	"	27¾ "	28 "
36x3 "	"	29¾ "	30 "
28x3½ "	D.	20 11-16 in.	21 "
30x3½ "	"	22 11-16 "	23 "
32x3½ "	"	24 11-16 "	25 "
34x3½ "	"	26 11-16 "	27 "
36x3½ "	"	28 11-16 "	29 "
28x4 "	E.	19 11-16 "	20 "
30x4 "	"	21 11-16 "	22 "
32x4 "	"	23 11-16 "	24 "
34x4 "	"	25 11-16 "	26 "
36x4 "	"	27 11-16 "	28 "
28x4½ "	F.	18 21-32 "	19 "
30x4½ "	"	20 21-32 "	21 "
32x4½ "	"	22 21-32 "	23 "
34x4½ "	"	24 21-32 "	25 "
36x4½ "	"	26 21-32 "	27 "
28x120m-m & 5 in.	"	17 21-32 "	18 "
30x120 " & 5 "	"	19 21-32 "	20 "
32x120 " & 5 "	"	21 21-32 "	22 "
34x120 " & 5 "	"	23 21-32 "	24 "
36x120 " & 5 "	"	25 21-32 "	26 "
40x120 " & 5 "	"	29 21-32 "	30 "
		Circumference at Tire Seat.	
750m-mx 85m-m	D.	69 5-16 in.	
800 " x 85 "	"	76 1-32 "	
760 " x 90 "	"	70 3-16 "	
810 " x 90 "	"	76 in.	
870 " x 90 "	"	83¾ in.	
910 " x 90 "	"	88½ "	
1010 " x 90 "	"	101⅝ "	
820 " x120 "	F.	70 "	
850 " x120 "	"	74¼ "	
920 " x120 "	"	82¾ "	
1020 " x120 "	"	94 15-16 in.	

* Note that the 28x2½ and 30x2½ tires are made interchangeable with the 28x3 and 30x3 tires. m Millimetres.

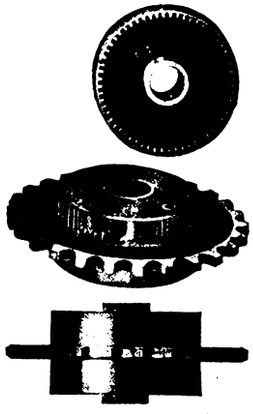
We also manufacture a complete line of **COPPERIZED AUTOMOBILE OILERS**—the kind that last.

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N. Y. Office, 258 BROADWAY. BRIDGEPORT, CONN.

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GEARS.

BROWN-LIPE.

The reputation or our gears adds to the value of any car.

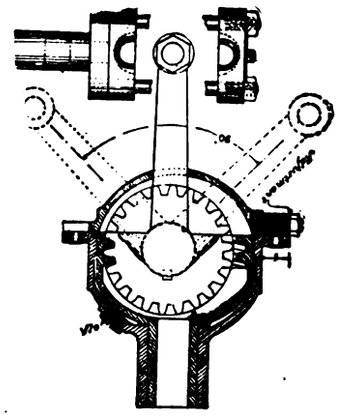
THOS. J. WETZEL, 11 Warren St., New York
PETERSON & DRAPER, 166 Lake St., Chicago
} Direct Sales Representatives.

CHAS. E. MILLER, { 97 Reade St., New York / 318-20 N. Broad St., Philadelphia / 202-4 Columbus Ave., Boston } New York, Philadelphia and Boston Sales Agent, carrying stock.

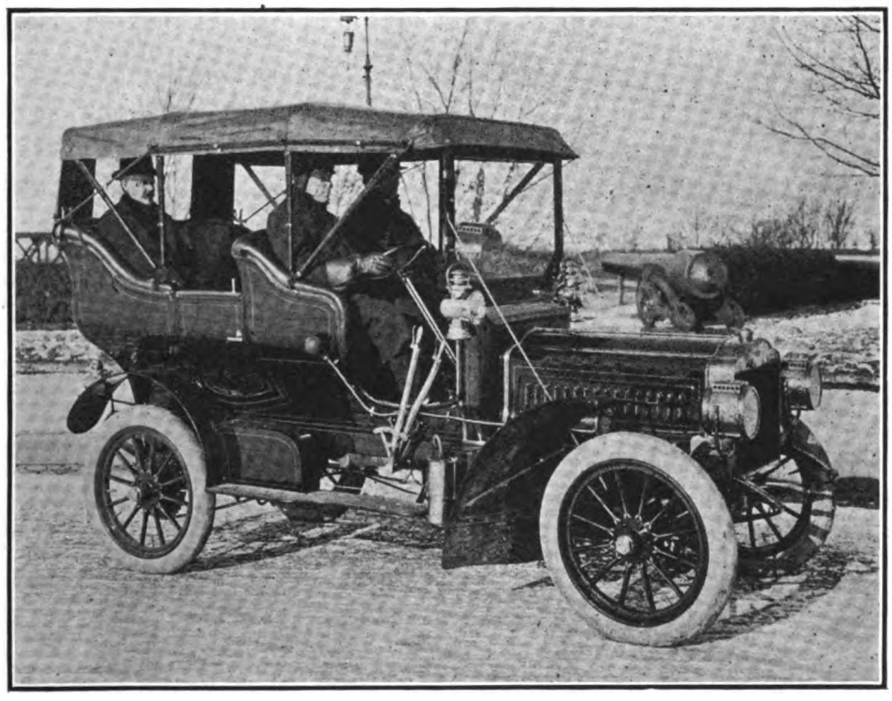
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BROWN-LIPE GEAR COMPANY.
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COL. SPRAGUE'S CANOPIES.



A Sprague Extension Top on a **"Thomas Flyer"**; recognized as the correct thing in tops.

See our Exhibit at New York Chicago and Cleveland Shows.

Send for Catalogue.

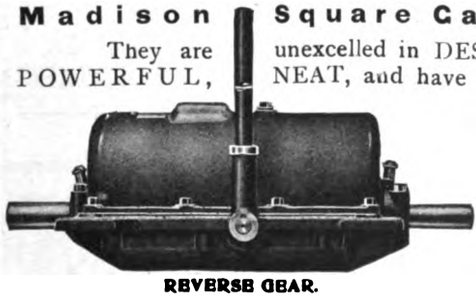
The Sprague Umbrella Company,

Norwalk, Ohio, U. S. A.

SEE

the **JOHNSON MARINE REVERSE GEARS** and **FRICTION CLUTCHES** exhibited in Concert Hall at **Madison Square Garden** during the **Automobile Show.**

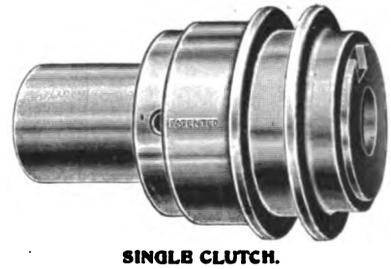
They are POWERFUL, unexcelled in DESIGN, QUALITY and FINISH. COMPACT, NEAT, and have excellent wearing qualities. Absolutely the best on the market. Have been adopted by the LEADING MANUFACTURERS.



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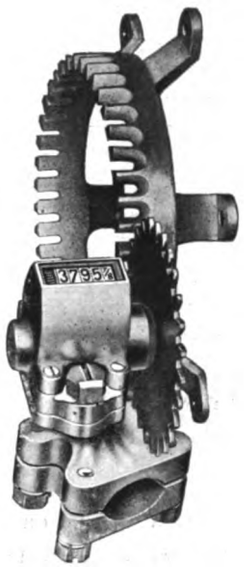
ASK FOR CATALOG.

The Carlyle Johnson Machine Co.,
HARTFORD, CONN.



SINGLE CLUTCH.

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Veeder

ODOMETERS FOR MOTOR CARS

will be on exhibition at our spaces at New York, Chicago, Detroit, Cleveland and Boston, where we shall be very glad to talk with manufacturers of cars concerning the special discount we make to those who equip their output with Veeder Odometers.

Dealers and jobbers are likewise invited to drop in at our booths to discuss the sale of Veeder Odometers for this year.

Automobile owners who wish to see the odometers in actual operation should feel perfectly free to come in and ask all the questions they choose. That is what we are there for.

THE VEEDER MFG. CO., 26 Sargeant Street, Hartford, Conn.

Cyclometers, Odometers, Tachometers, Counters and Fine Castings.

Pope Manufacturing Company,

Importers and Jobbers of

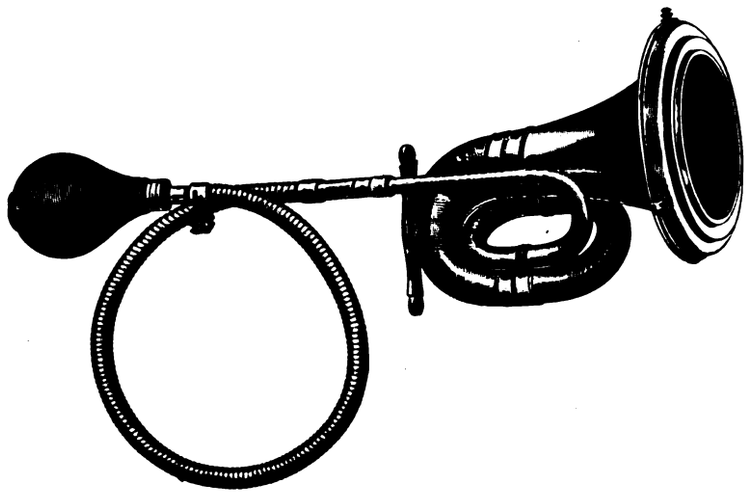
ACCESSORIES.

FRENCH HORNS. (No others.) } **TONE.** 35 STYLES, EACH THE BEST OF ITS KIND IN **FINISH.** **APPEARANCE.**

We have a buyer in Paris, and are in a position to secure the

BEST

that are made. This cut shows one style of very large, deep-toned horn.



Our line of Imported

HORNS AND GOGGLES

on view New York Show Week, at Hotel Victoria, Broadway and 27th St.

WE CARRY A COMPLETE LINE of Sundries, Supplies, Tools. Our facilities for the prompt shipment of orders are absolutely unexcelled. Our stock is large, varied and complete.

WE WANT THE NAME of every *DEALER and GARAGE* for our mailing list, and to send our 1905 100 Page Catalog.

EVERYTHING FOR THE MAN WITH THE CAR.

POPE MANUFACTURING COMPANY,
Eastern Department, Hartford, Conn.

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By supplying the demand for a tire that would give assured service, the

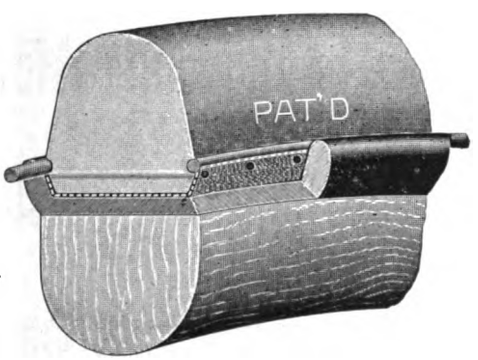
FIRESTONE SIDE-WIRE MOTOR TIRE

made possible the success of the Commercial Automobile of to-day, and is the recognized standard for this class of service.

Many of the best and most reliable Electric Pleasure Cars are equipped with Firestone Side-Wire Motor Tires know not of tire troubles.

Manufacturers of Gasoline and Steam Pleasure Cars, in recognition of the demand for a reliable, non-trouble giving tire, are designing models adaptable to

High Efficiency Firestone Side-Wire Motor Tires



The High Efficiency Tire marks another advancement in our efforts to meet the demand of the pleasure car owner. It has been carefully planned and tried out for this class of work. It will make its initial public appearance for favor at the New York Automobile Show.

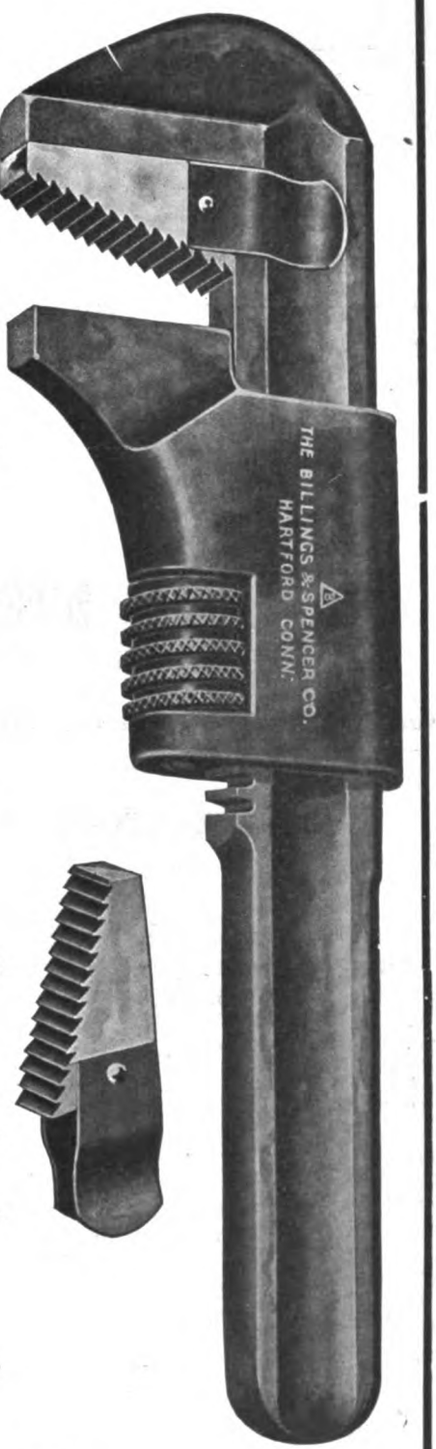
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Firestone Tire & Rubber Co.,
AKRON, OHIO

1788 Broadway, New York
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65 Beverly St., Boston
550 Wabash Ave., Chicago
2212 Olive St., St. Louis

A Wrench is a Wrench!
YOU SAY?

It is until it breaks, and then it is scrap!



The "B. & S." **Auto Wrenches** are every part **Drop Forged** and are built to wear a lifetime.

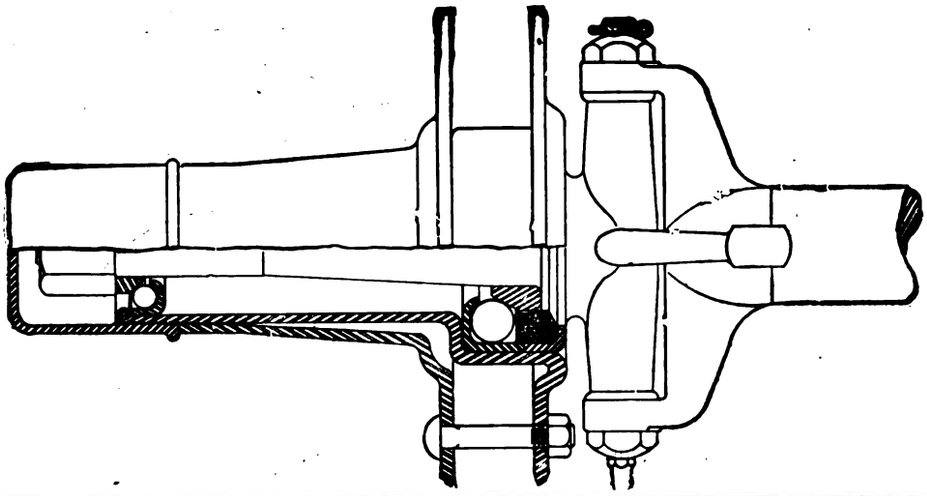
There are 4 sizes: **8 in., 10 in., 14 in. and 18 in.**

The cut shows 8 in. Wrench with Pipe Wrench attachment.

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THESE HUBS are drawn from Sheet Steel.
Extremely light and strong Hubs with a smooth surface for finish are obtained.
Center line of Spokes is close to Steering Head. Smooth and Easy Steering is obtained.
Races are GROUND IN POSITION.
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We manufacture for the trade only.

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For Runabouts, Tonneau and Side Entrance Cars.

ALUMINUM BODIES.

Aluminum Fenders, Hoods, Etc.



Top Attachments For All Cars.

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LEINBACH BROS., 253-255 Jefferson Ave., DETROIT, MICH.
Oldest Canopy Builders in America.

YOU TRY NO EXPERIMENTS
WHEN YOU TRY OUR

PRESSED STEEL FRAMES.

The Leading Makers of the Industry Have Long Ago Proved Their Worth.

We Make Them from the Highest Grade of Cold Rolled Steel under Perfect Conditions of Manufacture.

Accuracy and Quality Guaranteed.

See Specimens at the Madison Square Garden (New York) Show, Section A, Concert Hall, or send drawings and get our prices.

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The Best Automobile Motors

AND

Automobile Charging Machines

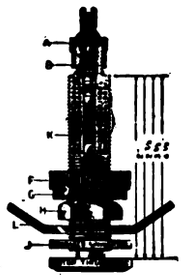
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CLEVELAND, O.

SCHRADER UNIVERSAL VALVE.

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SIMPLE AND ABSOLUTELY AIR TIGHT.

MOTOR TIRE VALVES, as shown in cut, are made in four lengths as shown. Cut is exactly half size of the 2 in. valve.

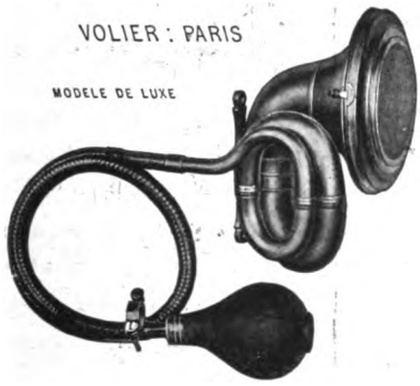
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Volier Horns

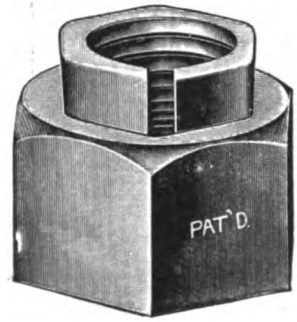


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IS WHAT
COLUMBIA LOCK NUTS

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NOT LIKE OTHER NUTS.

It is the *ONLY NUT* that can forever withstand the shocks and strains to which an automobile is subjected, Locks automatically and absolutely. Made in two units, it combines the three forces of wedge, screw and lever, forming a binding lock of immense power. Made in all sizes and is of universal application. Write for prices.

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WHEN YOU USE
FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

A big and profitable seller to all jobbers, dealers and garages.

OUR PROPOSITION IS INTERESTING.

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THE ONLY WAY

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Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

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RADIATORS,

TANKS,
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HOODS.

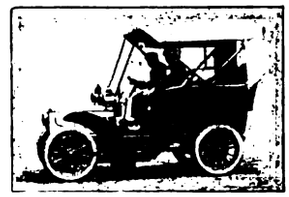


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Automobile Chains, Sprockets, Spur and Bevel Gears.

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Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
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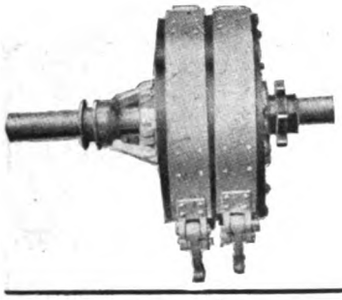
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Two Speeds and Reverse.

OUR SPECIALTY.

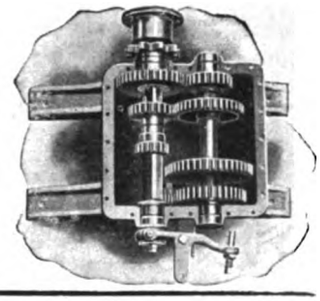
SLIDE GEAR.
Direct Drive, Three Speeds and Reverse.



Transmission Gears

We have been manufacturing these gears for the large trade for three years, consequently in buying them you buy no experiments. Our prices are interesting. Write us.

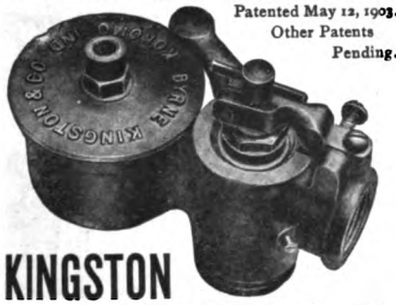
SYRACUSE GEAR CO., - Syracuse, N. Y.



Kingston Carburetor.

OVER 23,000 IN USE.

Patented May 12, 1903.
Other Patents Pending.



KINGSTON

Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

Pat. Jan. 29, 1901.



An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
THE ADAMS COMPANY, Dubuque, Iowa.

DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 88 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.



If You Are Rushed—Have More Work Than You Can Handle in Good Time—Let Us Help You Out.

WE ARE HELPING OTHERS ON THEIR SPECIAL MACHINE WORK.

WHY NOT YOU?

THE CASE MANUFACTURING CO., Columbus, Ohio.

Makers of Front Axles, Rear Axles, Transmission Gears and Special Parts.

Send for Circular No. 8.

It you are going to build automobiles you will want this circular. It describes our Axles, Change Gears, Cone Clutches, Mufflers, Steering Gears and other standard parts. All of these parts have been designed with unusual care. They are suitable for cars of all classes.

FEDERAL MANUFACTURING COMPANY, Elyria, Ohio.

Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.

NEW YORK SHOW—Section "D," Concert Hall; CHICAGO SHOW—Gallery Spaces 241, 242, 243 and 244.

THE MANUFACTURERS FOUNDRY CO., Waterbury, Ct.

WILL EXHIBIT SAMPLES OF VARIOUS TYPES OF

CYLINDER AND OTHER CASTINGS

WHICH THEY ARE PRODUCING FOR THE AUTOMOBILE TRADE

At MADISON SQUARE GARDEN, New York City, JANUARY 14th to 21st, 1905
CONCERT HALL—SECTION C.

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WHITNEY CHAINS

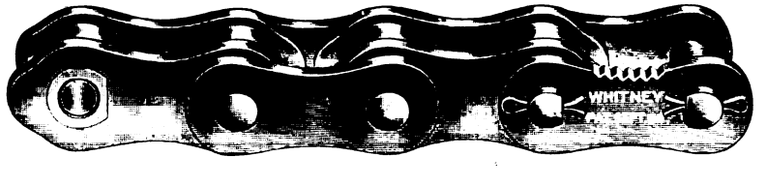
SEE THEM

ON MOST OF

THE LEADING CARS

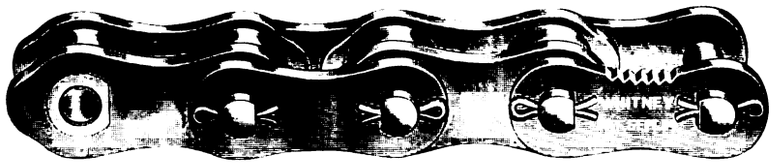
AT THE

New York Automobile Show



"WHITNEY" ROLLER CHAIN, RIVETED TYPE

All links on both sides are Riveted with exception of the one Connecting Link shown.



"WHITNEY" ROLLER CHAIN, COTTER DETACHABLE TYPE.

All links on one side are Riveted and all links on opposite side are Detachable. One link only is considered the Connecting Link, this being distinguished from the others by notches in the top surface.

The Whitney Mfg. Co., Hartford, Conn.

WHITNEY PAT. SEPT. 1904.

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OLDSMOBILE

THE success of our demonstrations, the enthusiasm of our visitors, the magnitude of our sales, testify to the leading part played by the Oldsmobile in the New York Show.

Our sales were unprecedented and indicate a prosperous year in store for our agents.

Our 20 H. P. Touring Car fully met every expectation. In demonstration it easily took 12 and 15 per cent. grades on high speed.

Our commercial vehicles and Ten Passenger Coach attracted favorable attention, particularly on the streets in demonstrations.

We did it with this line:

Oldsmobile Standard Runabout,	**$650**
Oldsmobile Touring Runabout,	**$750**
Oldsmobile Light Tonneau Car,	**$950**
Oldsmobile Touring Car, 2 Cylinder,	**$1400**
Oldsmobile Light Delivery Car,	**$1000**
Oldsmobile Heavy Delivery Car,	**$2000**

Did you get copies of "Good Talk" and George Ades "The Rolling Peanut"? If not, write for a free copy.

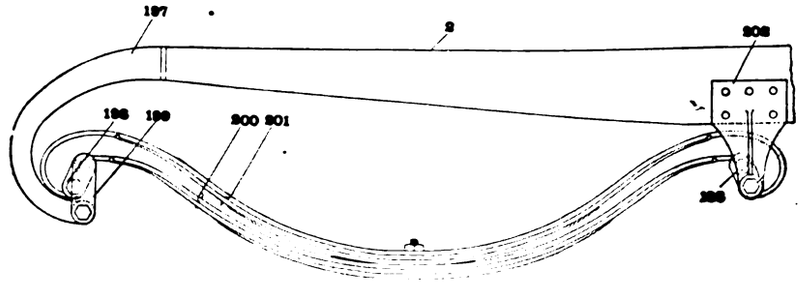
OLDS MOTOR WORKS,

1332 Jefferson Ave., - - - - DETROIT, U.S.A.

Member of the Association of Licensed Automobile Manufacturers.

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WINTON



Twin Springs—An Exclusive Winton Feature.

Automobile springs generally have one of two radical faults.

First.—Some springs are *so stiff* that they do not absorb the shocks of travel, but transmit them to the motor, greatly to its damage, and jar the passengers in a most uncomfortable manner.

Second.—Other springs are *so elastic* that the car bounds up and down, like a ship at sea, distressing the motor and the passengers alike.

The ideal spring, consequently, is one that combines *resistance* (stiffness) with *resilience* (elasticity), in such proportion that the motor sustains no shocks and the passengers travel in complete comfort.

WINTON *Twin Springs* alone possess this combination of merit.

Two four-leaf springs (200 and 201) are united in the centre and shackled at either end (198). They support the frame (2) by means of shackle (199), which is attached to spring horn, and spring plate (202).

Because of the *freedom of action* allowed by the shackles (198), the result, when car is used, is a *light spring* for light loads and good roads, and a *heavy spring* for heavy loads and rough roads.

The efficiency of these *Twin Springs* has been absolutely proved, not only by mechanical tests, but also by use on WINTON cars for *more than a year*.

Individual owners who have used them could not be persuaded to use any other kind. The comfort these *Twin Springs* provide adds a new delight to motoring.

Twin Springs are but one of *many exclusive features* to be enjoyed by Winton owners in 1905. Booklet No. 8 tells about the others.

Five Models—All with Four-Cylinder Vertical Motors.

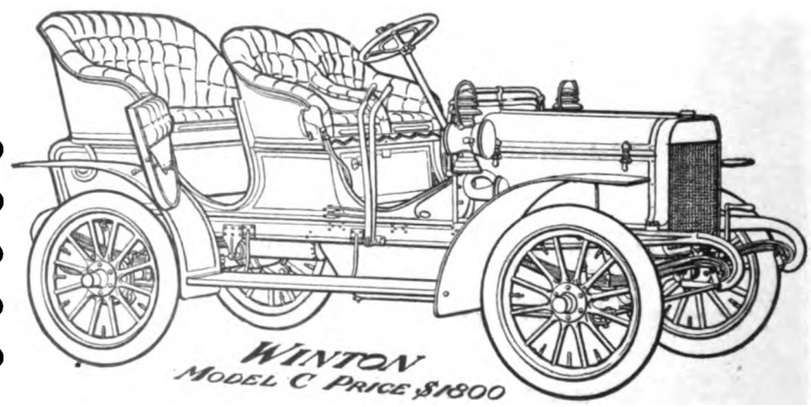
Model C, Side Entrance, 16-20 H. P., $1800

Model B, Side Entrance, 24-30 H. P., $2500

Model B, Limousine, 24-30 H. P., $3500

Model A, Side Entrance, 40-50 H. P., $3500

Model A, Limousine, 40-50 H. P., $4500



The Winton Motor Carriage Co.

MEMBER A. L. A. M.

CLEVELAND, O., U. S. A.

POLAR COMPOUND

Keeps water fluid at 10° *below* zero. One filling lasts all winter. 25c. per gallon, f. o. b. Cleveland. Shipping cans extra—5 gal., 50c.; 10 gal. 75c.

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"From my experience, I would certainly recommend a Locomobile to any one considering the purchase of a touring car."—J. H. M., New Haven, Conn.

"As you know, I had in N. Y. City the celebrated ——— ($6,700 foreign car), but it is not in the same class with the LOCO to my mind."—D. M. B., Amherst, Mass.

"We have had a letter from his chauffeur, saying Mr. B.—— is highly pleased with his Locomobile, it having gone 700 miles and no delays or difficulties."—J. H. M., Boston, Mass.

"I wish to say the Locomobile fulfills my expectations in every respect; it runs magnificently, does its work easily, quietly and without vibration."—A. S. P., Wichita, Kan.

"I must say the Locomobile has given me entire satisfaction in every way; the more I drive it the more I think of it."—C. L., New York.

"The Locomobile has now run about ten thousand miles, and is in as good condition as ever."—A. A. M., San Francisco, Cal.

"My Locomobile has made since the 22nd of January, 1903, 13,950 miles."—R. L. M., New York, March 31, 1904.

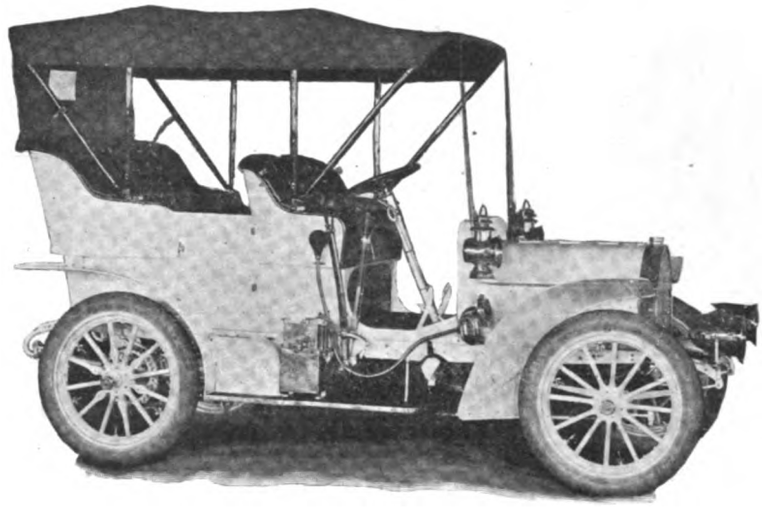
"The Locomobile is running beautifully and giving entire satisfaction."—W. A. R., Woonsocket, Mass.

"Met on this trip three parties who were running 4-cyl. Locomobiles, and they seemed to be very much pleased with them. One man, in fact, said he would not exchange his LOCO for the best foreign car built."—F. G. T., Springfield, Mass.

Locomobile

Gasolene Touring Cars.

"Easily the Best Built Car in America."



"This is the fifth automobile that I have had, but of all the cars I have seen or used, there is none that will compare with the Locomobile in any manner."—S. T. M., Lafayette, Ind.

"The Locomobile is delightful in every respect, and there has been no trouble whatsoever so far."—H. S. E., New York.

"It gives me much pleasure to say a good word for the Locomobile Gasolene Touring Car—I regard it as the most reliable and generally satisfactory of any of the twelve automobiles I have owned."—G. F. C., New York, N. Y.

"In every way the Locomobile has been entirely satisfactory; never has failed to do what was required of it. Refer any to me you care to."—A. G. M., Norwich, Conn.

"I have now run my Locomobile for about 6,000 miles, and it has never refused to come home under its own power."—F. W., Fitchburg, Mass.

"I am very much pleased with the behavior of the Locomobile, and consider it way ahead of last year's car, although that gave good satisfaction."—F. W. B., Bridgeport.

"Came up to Boston yesterday. The Locomobile went like a bird. Have been over 500 miles, and have not missed an explosion."—F. H. T., New Bedford, Mass.

"I think the Locomobile Company's claim of "Easily the Best Built Car in America" is a perfectly just one. I can readily claim it to be superior to any American and equal in the same horse power to any French car, and at the same time perfectly adapted to American roads."—J. C. S., Boston, Mass.

"I think the construction (of the Locomobile) is absolutely perfect, for never was a more rigid test given a machine than our trip from Bridgeport to Providence."—A. L. P., Providence, R. I.

"I have used it now three months in my business, which is constant. We are averaging sixty miles per day, up hill and down. The Locomobile is certainly all you have recommended."—Dr. R. W. L., Ridgefield, Conn.

"Have run the 4-cyl. Locomobile purchased from you last November about 5,000 miles. About 4,000 miles of this was through the mountains of California. I do not think any machine could give better satisfaction."—D. H. G., N. Y.

Write for full information regarding our 1905 product.

All models are of the four-cylinder type, with side entrance tonneau. Prices, $2800 to $8000.

The *Locomobile* Company of America,

BRIDGEPORT, CONN.

NEW YORK—Broadway, corner of 76th Street
BOSTON—No. 15 Berkeley Street
PHILADELPHIA—No. 249 N. Broad Street
CHICAGO—No. 1345 Michigan Avenue

Member Association Licensed Automobile Manufacturers.

"My Locoombile delivered to me in November, 1902, is running satisfactorily, and with the exception of such adjustments as are necessary on all cars is always in commission."—M. M. R., New York City.

"I am frank to say I am delighted with the Locomobile. Believe there is no better machine made—in fact, do not believe there is another machine in the country that would have gone where I did last Sunday."—C. B. M., Minetto, N. Y.

"Have run my Locomobile easily 8,000 miles. She has always gone and returned from every place I have started for without any trouble."—D. N. A., Bridgeport, Conn.

"Cannot say too much in praise of the Locomobile. Have several friends who own cars, and they say it is equal to, if not better, than the foreign cars."—C. L. H., Norwich, Conn.

"I have now operated the Locomobile for about five months. During that time I have never wanted the car when it was not ready to go out."—W. A. W., Jr., Hoosic Falls, N. Y.

"I can offer no suggestions which would be of value as to the improvement of the Locomobile. It has far surpassed my expectations."—W. B., Boston, Mass.

"Every time I drive the Locomobile I am more than pleased with it. Saturday evening last I drove 20 miles in 42 minutes, including three long hills, and the car ran like a watch."—F. W. M., Jr., La Salle, Ill.

"I have yet to see a car which I think is better than my Locomobile, or will stand up as well over all kinds of country roads with the ordinary usage which a car gets."—P. W. W., Boston, Mass.

"I fail to see how you could improve in any way upon the Locomobile, as its details seem perfect, and it is without doubt "easily the best built car in America."—A. L. P., Providence, R. I.

"Where my Locomobile was this summer for a month it was the only car out of two dozen, including high-priced foreign cars, that was always in good shape and running every day."—C. W. L., New York, N. Y.

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MORGAN & WRIGHT TIRES ARE GOOD TIRES

SUPERIOR IN DIRECT COMPETITION.

J.B.PHILLIPS. PRESIDENT.

L.S.TYLER. TREASURER.

THE MAINE ELECTRIC COMPANY
(INCORPORATED)

MANUFACTURERS OF DYNAMOS AND MOTORS.
ELECTRIC HOISTS AND SPECIAL MACHINES.

TELEPHONE CONNECTION.

OFFICE AND WORKS. PORTLAND, MAINE, U.S.A.

QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE. ALL AGREEMENTS ARE CONTINGENT ON STRIKES, ACCIDENTS AND ALL OTHER DELAYS BEYOND OUR REASONABLE CONTROL.

PORTLAND, ME., Jan. 10/1905

Morgan & Wright,

John Hancock Bldg.,

Boston, Mass.

Dear Sirs:

During the past year we have used a number of your tires as well as a number of other makes. Some of these have been in direct competition on the same machine, and our experience is that the Morgan & Wright tires are much better suited to the severe usage to which they are subjected here than any others which we have tried. We are using them wherever we can.

Very truly yours,

The Maine Electric Co.

L S Tyler.

QUALITY COUNTS.

Send for 1905 Catalog.

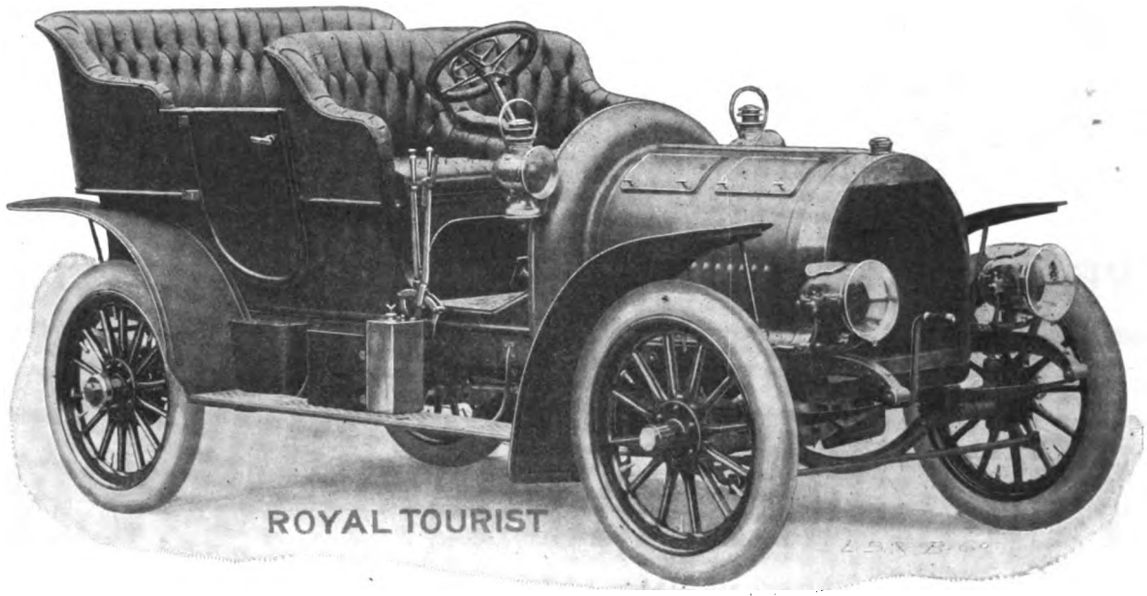
MORGAN & WRIGHT, CHICAGO.

NEW YORK, DAYTON, DETROIT, ATLANTA, ST. LOUIS, SAN FRANCISCO.

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THE ROYAL TOURIST

"TRUE BLUE."



Model F.

32-38 H. P. **2500 lbs.**

$3000.00.

Its Equal Has Never Been Produced Before.

It will pay to investigate carefully at the Chicago Show. Stands 33-34-35.

GUARANTEED DELIVERIES.

THE ROYAL MOTOR CAR COMPANY, Cleveland, Ohio.

NEW ENGLAND AUTOMOBILE CO.
182 Columbus Ave., Boston.

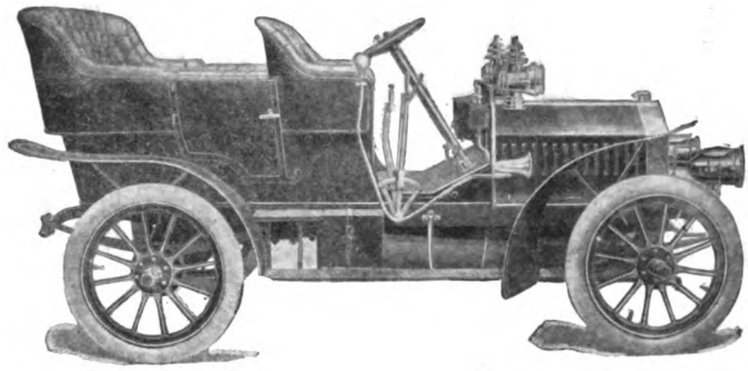
C. A. DUERR & CO., Inc.
New York.

HARRY BRANSTETTER CO.
Chicago.

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THE "CLEVELAND"

A high-grade, light-weight touring car.



18 h. p. four cylinder vertical engine. **Price, $2,800.**

FEATURES:—91-inch wheel base; pressed steel frame; aluminum underbonnet; spark and throttle control on top of steering wheel; three-speed transmission with direct drive on high speed; mechanically actuated inlet and exhaust valves; jump-spark ignition; side door entrance.

We are establishing Agencies. Write for particulars.

CLEVELAND MOTOR CAR CO., ▪ ▪ CLEVELAND, O.

THE BAKER ELECTRIC

AT THE NEW YORK SHOW

WE EXHIBIT OUR LATEST PRODUCT,

The Baker Electric Depot Carriage,

The Most Elegant of all Electrics.

ALSO,

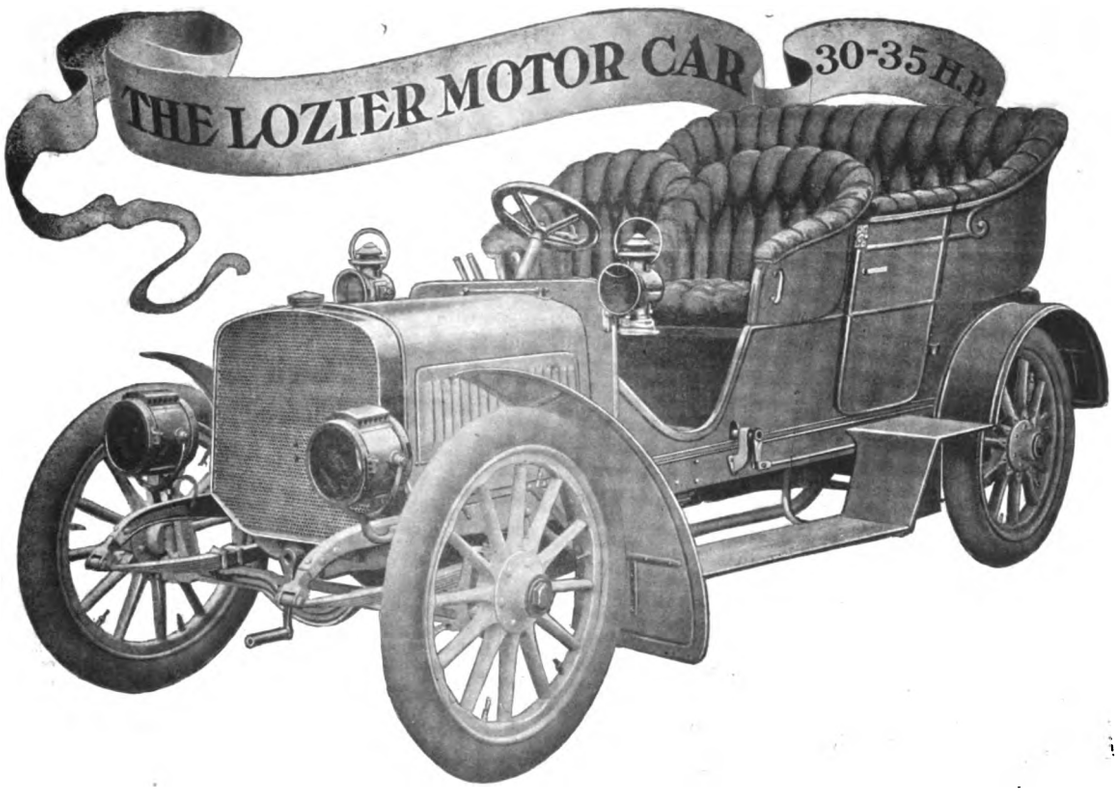
RUNABOUTS, STANHOPES, SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.



THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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Speaking of Motor Cars

What factor most influences your purchase—is it fine finish and smart exterior appearance of a car, or the dependability of its motor and working parts—or both? You have in THE LOZIER MOTOR CAR a correct combination of both.

Fine appearance is a large item, and is as essential to the Motor Car as is correct dress to the human family—it must be in keeping.

But the MOTOR—that is the important factor, and in that is where we excel. Better not have a Motor Car if its motive power and controlling mechanism are not absolutely dependable.

Our many years experience in the manufacture of High Grade Gasoline Motors and our very large output, have given us a practical knowledge of the subject that few manufacturers possess. Our facilities and equipment for the building of this product are the best in the country, and as it has ever been the LOZIER policy to build the best that money and brains could produce, a Lozier Motor is a guarantee of excellence in itself. Its correct installation and control, and consequent quiet running, are assured.

LOZIER

The body and finish throughout are in keeping with the high grade motor and controlling mechanism—in short, the entire combination is correct.

The motor is of the four-cylinder, vertical type—Ignition by high tension magneto—Tonneau, double side entrance—Seating capacity, 5 to 7—Wheels, 36 inches—Wheel base, 115½ inches (one of the largest American cars)—Price, $5,000 and upward, according to style of body.

Send for a copy of our catalogue.

Motor Boat Agents are requested to write us for our motor boat discounts.

The Lozier Motor Co., New York.

1 BROADWAY, Suite 9.

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75 PER CENT.

of all cars exhibited
at the
New York Automobile Show were equipped with

CLINCHER TYPE TIRES

THE



ODRICH TIRE,

The Original American Clincher.

Winner of first place in the great endurance runs and awarded the Grand Prize—Highest Award by the St. Louis Exposition.

MANUFACTURED BY

THE B. F. GOODRICH COMPANY,

AKRON, OHIO.

NEW YORK,
66-68 Reade St. and 1625 Broadway.

CHICAGO,
141 Lake St.

SAN FRANCISCO,
392 Mission St.

BOSTON,
155-161 Columbus Ave.

PHILADELPHIA,
909 Arch St.

BUFFALO,
9 W. Huron St.

DETROIT,
80 E. Congress St.

DENVER,
1444 Curtis St.

CLEVELAND,
420 Superior St.

LONDON, E. C.,
7 Snow Hill.

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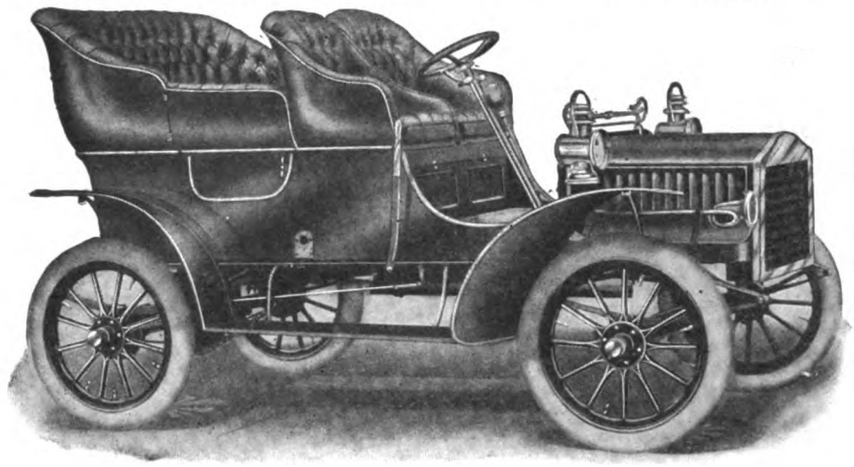
THE MICHIGAN

Two Models—"E" and "D."

Light Touring Cars

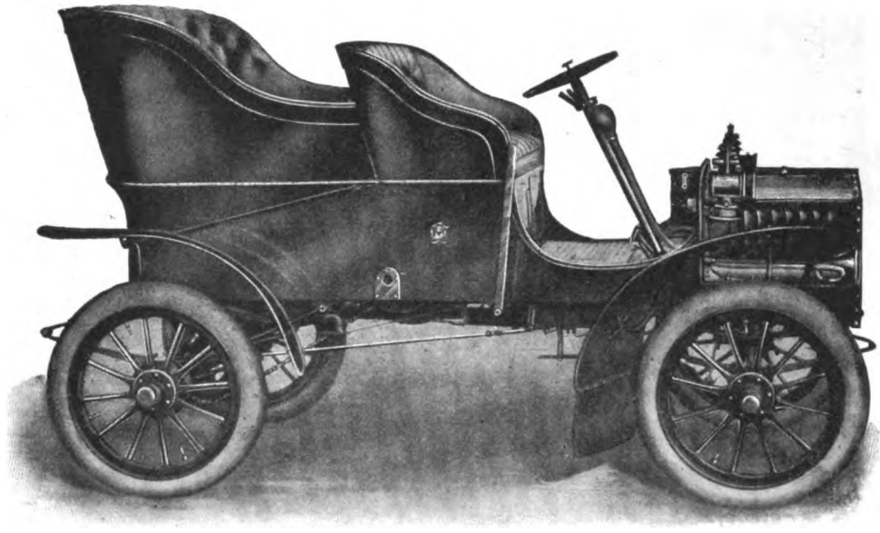
For 1905.

Appropriately Named "The Car of Power."



Model E, 1905 Michigan—Price, $1,250. Wheel Base, 86 Inches.

This superb new creation for the coming season must be seen to be appreciated. It first appeals to the purchaser by its beauty. then it satisfies him by its SPEED, STRENGTH and DURABILITY.



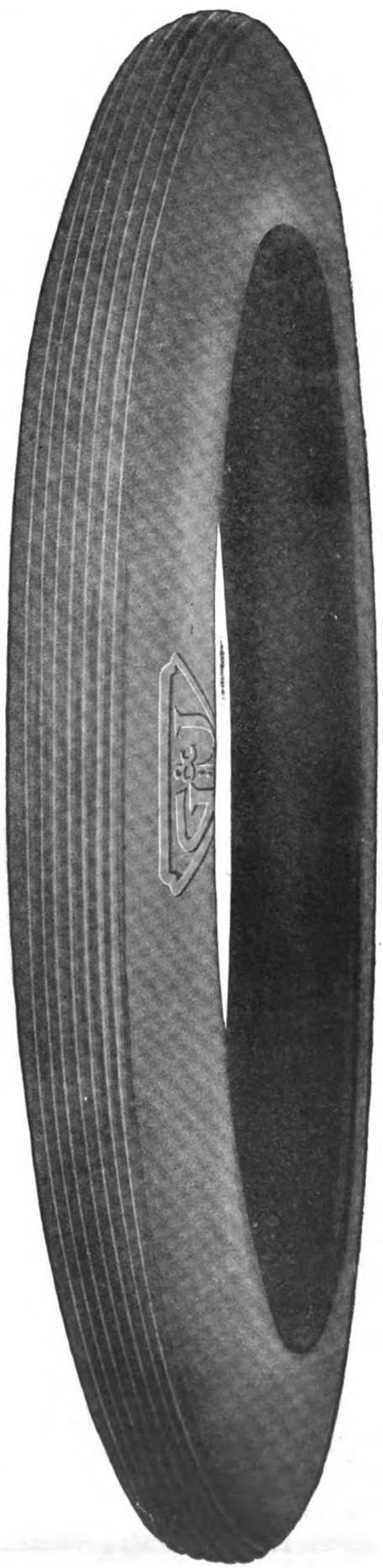
Model D, 1905 Michigan—Price, $1,100. Wheel Base, 80 Inches.

These magnificent cars are equipped with our tried and tested 1904 Motors, 4⅝x5 in., 14 brake test Horsepower, two cylinder, horizontal opposed, Planetary transmission, with two speeds forward and reverse; 1¼ inch chain. Warner differential, Hill Precision oiler, Kingston or Schebler carburetor, expanding rear hub brakes and brake on differential, full elliptic springs of best quality. French hood. Wheels, 30 inch. Diamond or other standard tire, 3½ inch. Construction throughout, first class.

☞ This car is unsurpassed in speed, power, appearance, easy riding, flexibility and general utility by anything at same price. We invite correspondence.

MICHIGAN AUTOMOBILE CO., Makers, Kalamazoo, Mich.

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Thread Fabric

G & J TIRES

Most Durable
Fastest
Safest

The thread fabric construction removes all internal friction from the fabric, so that the tires do not heat up under the longest drives at the highest speed. That is why G & J thread fabric tires are the most serviceable automobile tires in the world.

G & J TIRE CO.

Factory:
INDIANAPOLIS, IND.

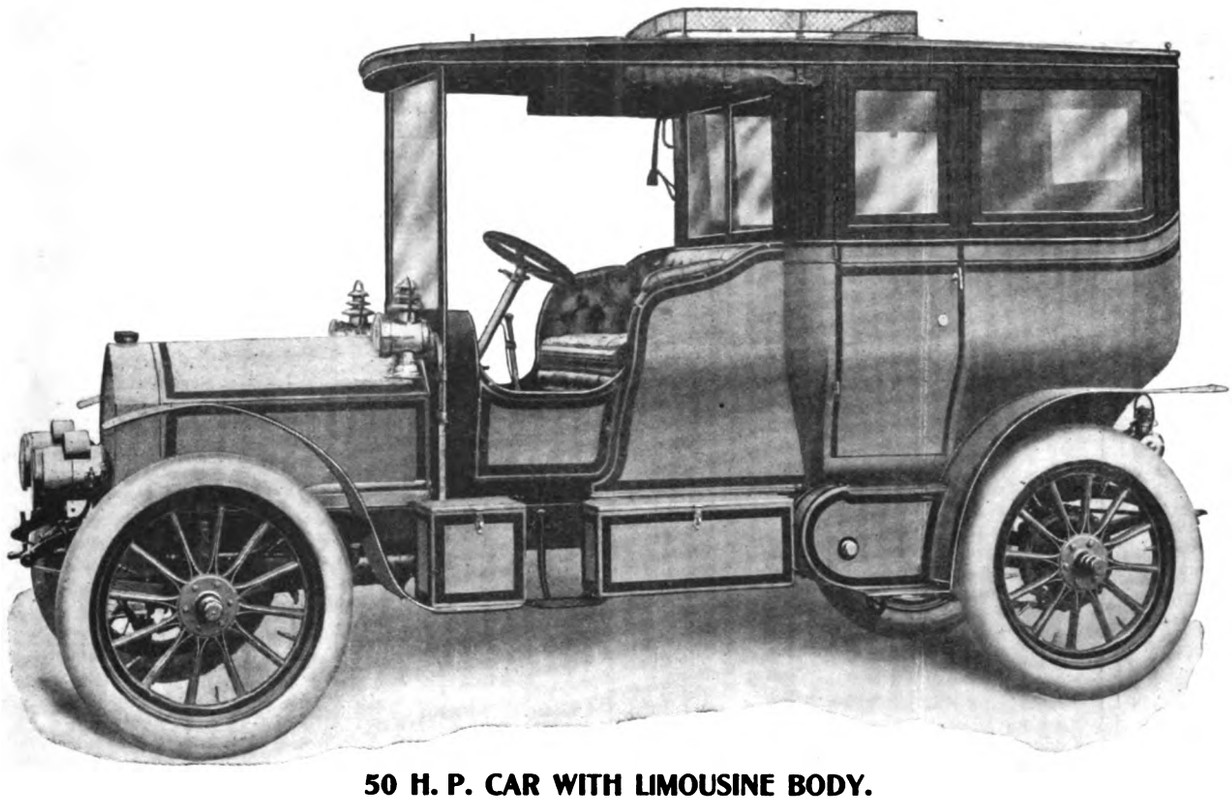
Branches:
CHICAGO, ILL. **DETROIT, MICH.**

Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded.



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APPERSON.



50 H. P. CAR WITH LIMOUSINE BODY.

24-40-50 HORSE POWER CARS.

Limousine Bodies. Side Door Bodies.

We do not turn out thousands of cars of the hand-me-down type, but **we** make **a few good cars for those who want the best.** Our cars are carefully made by highly skilled mechanics, who have been with us for many years.

OUR CATALOGUE, which is now being distributed, **tells you how they are made.**

The Oldest Makers in America. The Best Cars in the World.

APPERSON BROS. AUTOMOBILE CO., Kokomo, Ind.

Branches: 66 W. 43d Street, New York; 43 Columbus Avenue, Boston; 394 Wabash Avenue, Chicago.

Member Association of Licensed Automobile Manufacturers.

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1905 ANNOUNCEMENT

The Autocar

A NEW TYPE.

We believe that the Autocar in all its types represents the highest excellence in automobile design, workmanship and material. Every Autocar is built on honor. We feel, therefore, that our new type will meet with a cordial reception.

This car, **Type XI.**, larger and more powerful than the other types, has a four-cylinder vertical engine of 16-20 horsepower. The body is built on the newest and most approved French lines. The front seat is divided and both front and rear seats are large and comfortable.

While this car is built upon the tried Autocar principles which have been so splendidly proven, it shows a number of very important improvements making for increased simplicity, ease of operation, safety and comfort.

In fact, though Autocars have always been noted for absence of bewildering intricacy of mechanism, yet no one can but be impressed with the extreme simplicity of this new car. It is a triumph in scientific construction and arrangement.

This car has more than met our highest expectations in the road test. In fact, its performance has been a surprise to experienced automobile men. The power of the car carries it, fully equipped and loaded with five passengers up, tested 12 per cent. grades, for instance, at 20 to 25 miles per hour on the direct drive, while on the level the car attains a speed of 40 to 45 miles. The car is a superior climber on any hill.

Altogether our eight years' experience has enabled us to produce in this type, a four cylinder car we are assured cannot be surpassed by any similar car at any price.

The price of Type XI is $2000. Ready for delivery January 16.

Type VIII.—Four-Passenger at ($1400.) and

Type X.—Runabout at ($900,)

have made *Autocar Reputation.* Each stands at the head of its class for value and efficiency.

Catalogue descriptive or the 1904-05 types will be sent free upon request. This catalogue contains also addresses of our dealers throughout the country who will be glad to give demonstrations to prospective automobile purchasers and explain in detail the merits of our cars.

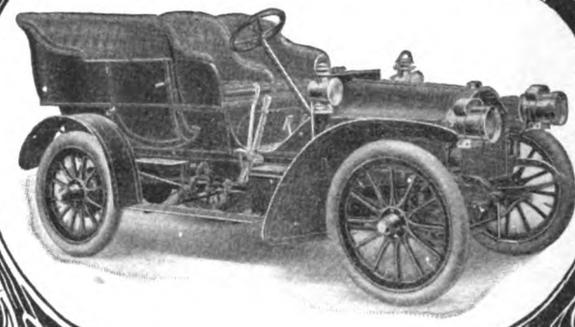
THE AUTOCAR COMPANY,

Ardmore, Pa.

Member Association of Licensed Automobile Manufacturers.

Peerless

The Car of Achievement



FIRST IMPRESSION OF A PEERLESS CAR.

APPEARANCE.

The first impression of an automobile is gained from its external appearance. You cannot look upon a Peerless model without being impressed with its strong, clean cut,

GRACEFUL LINES.

Moreover, the artistic treatment of finish and upholstery, and the elegance of its appointments, appeal to you as in thorough keeping with its ideal proportions, and the

PERFECTION OF DETAIL,

everywhere observable. In buying a Peerless car, you of course, get much else besides grace and beauty, but you get these to a degree unknown to any other car.

24 H. P.	30 H. P.	35 H. P.	60 H. P.
$3,200	$3,750	$4,000	$6,000

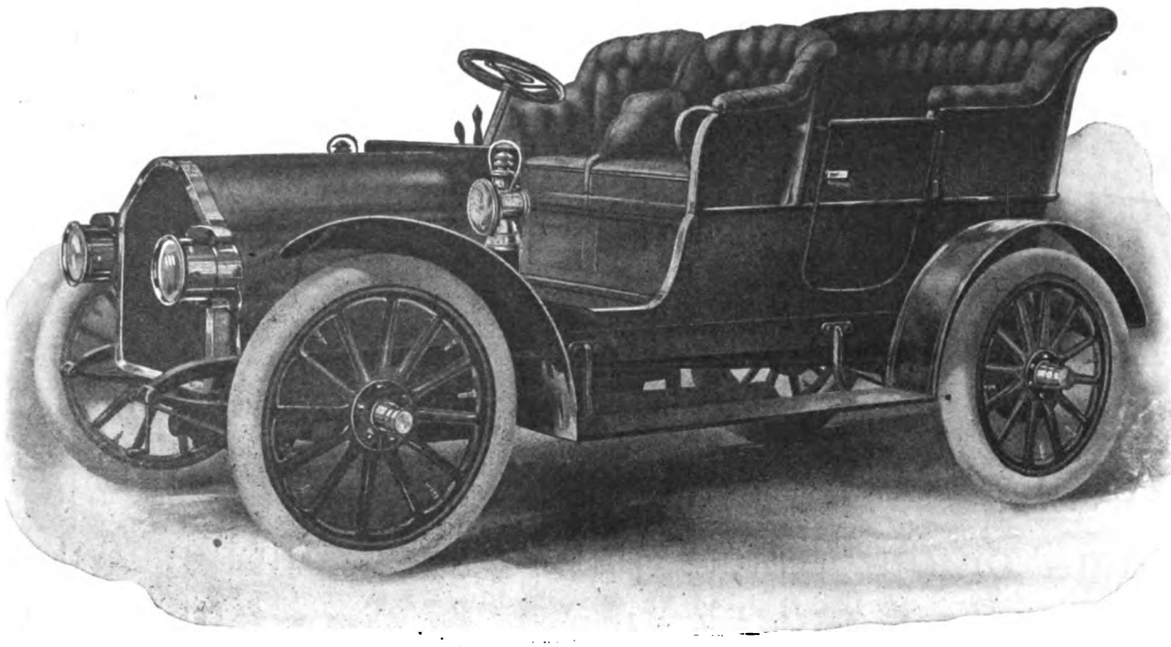
Send for Catalogue now ready.

PEERLESS MOTOR CAR Co.

CLEVELAND OHIO

MEMBER A. L. A. M.

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ORIENT TOURING CAR.

Model de Luxe, 20 Horsepower. $2250.

If you can think of any surer way to make money than by selling the Orient Touring Cars this season, please tell us about it.

We have been eleven years in business, building first bicycles, then motorcycles, then water-cooled automobiles, then air-cooled automobiles.

During the last seven years we have been continuously engaged in motor work—so we ought to know something about motor building.

We have more than three thousand air-cooled motors in successful operation—so we ought to know something about air-cooling.

And we state positively that there are no cars in America that equal this year's Orients, at anything like the same prices or power ratings.

The Orient Positive Air-Cooled 4-cylinder, vertical tandem engine is a triumph in motor construction. It runs coolly and quietly, developing its full rating power, and combines all the best features of up-to-date motor designing.

The same type of engine is used in the 16 H. P. as in the 20 H. P. cars. The lighter cars also have direct drive, sliding gear transmission, and three forward speeds and reverse.

The Orients are superbly designed. They have all the snap and style—the massive, powerful lines, gracefully treated—of the high-priced foreign cars.

TOURING CARS.	
Touring Runabout,	Model E, 16 H. P., $1500
Light Touring Car, with tonneau,	Model F, 16 H. P., $1650
Touring Car,	Model G, 20 H. P., $2000
Touring Car,	Model de Luxe, 20 H. P., $2250

BUCKBOARDS.	
Buckboard,	Model A, 4 H. P., $375
Surrey,	Model B, 4 H. P., $450
Runabout,	Model C, 4 H. P., $475
Tonneau,	Model D, 4 H. P., $525

Write for details and illustrated catalogue.

WALTHAM MANUFACTURING CO.,

Members of Association of Licensed Automobile Manufacturers.

GENERAL SALES OFFICES
(including Western Massachusetts and Connecticut).

44 Broad St., New York City.

Factory and New England Sales Offices:

WALTHAM, MASS.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

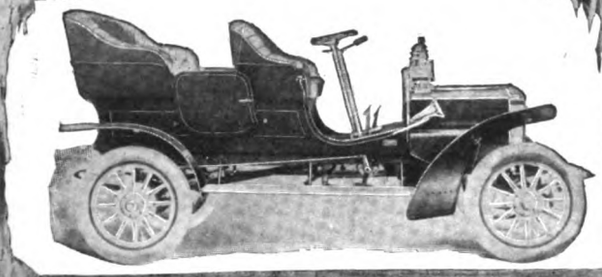
The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

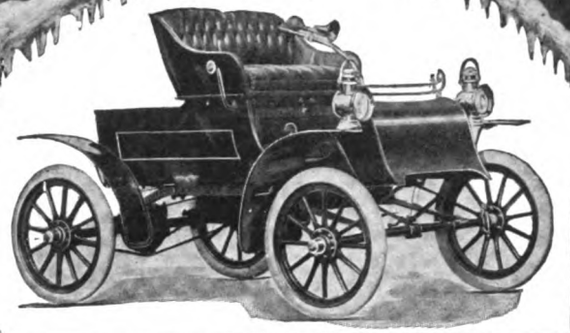
THE G & J TIRE CO., Indianapolis, Ind.

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NORTHERN AUTOMOBILES

Good in all Climes





SILENT AS THE SNOW

is the operation of the Northern Touring Car. The plans of this superb vehicle called for the elimination of all noise and vibration, and every part has been carefully worked out with this end in view.

That the result aimed at is fully attained, the car itself proves.

THE NORTHERN TOURING CAR IS THE QUIETEST, EASIEST RUNNING CAR IN THE WORLD.

The motor is a 5¼x5¼ two-cylinder of the opposed type, developing ample power to take the car anywhere an automobile can go. Wheel base is 100 inches, with wheels fitted with 30x4 detachable tires. Choice of four different bodies. **Two-passenger** body, a powerful, speedy machine, **$1,500. Four or five passenger,** rear entrance, **$1,600,** and **four or five passenger,** side entrance, $1,700; and, lastly, a superb Limousine body, **$2,500.** All styles interchangeable.

WRITE FOR CATALOG 16.

THE "STURDY NORTHERN" RUNABOUT

long ago justified its name. With ample reserve power, strongly built and with body hung on swivel entirely independent of the frame, rough roads and smooth roads are alike, so far as riding qualities go. Its record in the hands of thousands of users all over the country proves its durability and efficiency under all conditions.

THE 1905 NORTHERN RUNABOUT, grown in everything except price, embodies all the features suggested by experience and the advancement of the art of automobile construction. Among the improvements are new body design, larger fenders, larger oil cups, full back moulded seats and numerous detailed refinements of working parts.

Largely increased facilities make it possible to now offer this sturdy, ideal **"Runabout" at $650.**

It will pay you to get in touch with NORTHERN Automobiles.

NORTHERN MANUFACTURING Co.

DETROIT, MICHIGAN.

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Michelin

The King of all Pneumatic Tires

Why? The proof—

During the year 1904 MICHELIN TIRES did not lose a single important race, and all the cups have been won on them.

March	31.	Rothschild Cup	France
April	1.	De Caters "	"
May	20.	Chasseloup-Laubat Cup	"
June	17.	GORDON-BENNETT CUP	Germany
July	26.	St. Louis Non-Stop Run	America
Sep.	4.	Brescia Circuit (World's Fastest Road Race)	Italy
Sep.	15.	Consuma Cup	"
Oct.	8.	Vanderbilt Cup	America

1905—First Important Race this Year.

Delhi to Bombay Reliability Contest, Dec. 26–Jan. 2. Count Guilio de Groppelo driving a 16-20 H. P., F. I. A. T., with Michelin Tires won the cups offered by the MAHARAJAH of KAMPUR and the MAHARAJAH of GWALIOR.

We are the only direct representatives in the United States, and control entire shipments of Michelin tires. We also guarantee full protection to manufacturers, jobbers, dealers and consumers against all litigation.

The more you know about tires the better you like the MICHELIN.

Immediate delivery. All sizes for touring and racing. Write for instruction book, free.

MICHELIN TIRE AMERICAN AGENCY
Incorporated
6 West 29th Street, New York
E. D. WINANS, General Manager

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DO YOU WANT A GOOD CAR—

a car that will go anywhere you want, up hill and down, over good roads and bad?

We know you do. Now, our new four cylinder car is such a one. Vertical engine, in front. Individual cylinders, with ***copper*** water jackets—you know what that means. Thirty ***actual*** horse power—with us, that means more. Duplex disc clutch, with springs between the friction surfaces—no shocks on starting—no unnecessary strains on motor. Three speeds and reverse; planetary transmission handled by ***one lever.*** And the gears don't clatter or grind when going into engagement—some gears do.

Shaft drive, running on ball bearings. ***Positive*** and ***sufficient lubrication.*** Brakes you can depend on. A ***proper*** muffler which silences the exhaust as it should be silenced. This and our usual excellence of design and workmanship makes the car unusually free from noise and vibration—and don't ***you*** want

A QUIET CAR?

Our "big" car for 1905 is that kind.

Our smaller cars of the detachable tonneau-type will continue to be made. They will be equipped with the same engine and transmission as last year—there are no better of their kind.

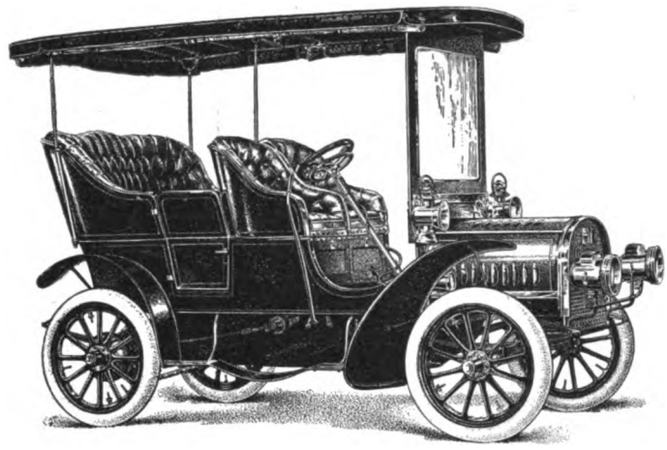
CADILLAC AUTOMOBILE COMPANY,

DETROIT, MICH.

Member of the Association of Licensed Automobile Manufacturers.

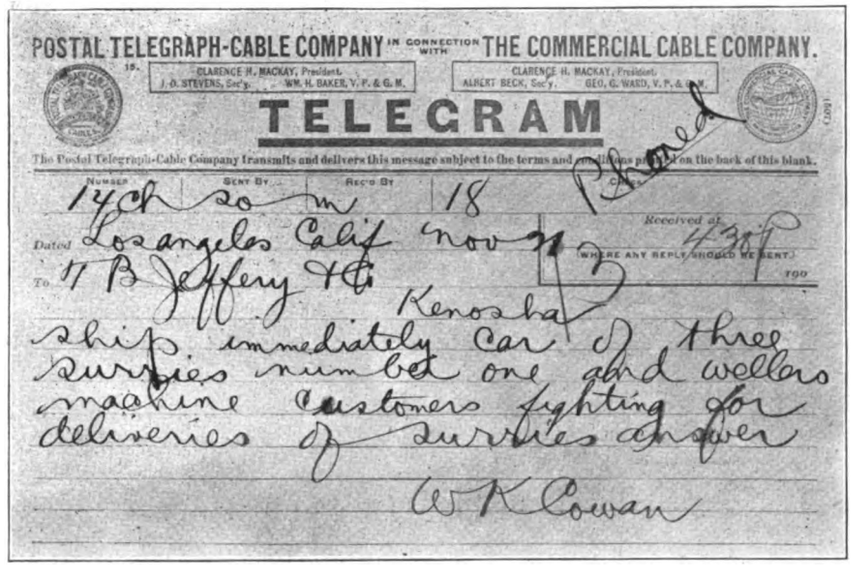
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Rambler



SURREY, TYPE ONE, WITH TOP, 18 H. P., $1500.

COMPLETE WITH LAMPS, TOOLS, ETC. IMMEDIATE DELIVERY.



POSTAL TELEGRAPH-CABLE COMPANY IN CONNECTION WITH THE COMMERCIAL CABLE COMPANY.

CLARENCE H. MACKAY, President. J. O. STEVENS, Sec'y. WM. H. BAKER, V. P. & G. M.

CLARENCE H. MACKAY, President. ALBERT BECK, Sec'y. GEO. G. WARD, V. P. & G. M.

TELEGRAM

The Postal Telegraph-Cable Company transmits and delivers this message subject to the terms and conditions printed on the back of this blank.

Number 14 Ch Sent By 20 m Rec'd By 18

Dated Los angeles Calif nov 11

Received at 4:30 P

(WHERE ANY REPLY SHOULD BE SENT.)

To W B Jeffery & Co Kenosha

Ship immediately car 7 three Surries number one and wellers machine Customers fighting for deliveries of Surries answer

W K Cowan

The season in Los Angeles, San Francisco and other points on the Pacific Coast had advanced two months when this telegram was sent and constant use had developed enthusiastic admiration of the vehicle. What has happened, will happen again—and in your city.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 302-304 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

NEW YORK AGENCY, 134 West 38th Street. REPRESENTATIVES IN ALL LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, January 26, 1905. No. 18

TORONTO SHOW IS OFF

Promoters Had Secured a Sanction, but Overlooked one Detail of Some Importance.

There will be no automobile show in Toronto, after all.

Although Toronto is a British possession, the National Association of (American) Automobile Manufacturers had duly issued a sanction for the show, and even the dates—February 27 to March 4—had been duly promulgated and the manager designated by the secretary of the N. A. A. M., Mr. S. Arthur Miles, formerly of England. The manager named was William J. Morgan, one of Miles's old pals, who makes his living in America and hurrahs for the British flag. He used to race on a bicycle for a living, but of late he has been wearing a white vest, and seems to be a sort of boomer of hotels and wealthy foreigners who need booming. Automobile races, speedways, shows and almost "any old thing" are the favorite mediums employed by Morgan to "deliver the goods."

Morgan has been very much occupied with his boomings of late, and, whether the fact was in any way responsible for the Toronto fiasco has not yet developed. At any rate, it appears that such a trifling detail as obtaining a hall in which to hold the show had been overlooked. It was supposed that one of the Toronto armories could be secured for the purpose, but it is now given out that the Canadian government has refused to rent the buildings for show purposes. But, whatever the cause, the show is off. That much is certain.

Ground for White Garage.

The estate, No. 230 Newbury street, Boston, owned by F. B. Riedell, has been sold to the White Sewing Machine Co., but the price has not been given out yet. The White company will erect a large garage, salesroom and repair shop on the property. The property consists of a lot containing 7,200 square feet and a three story brick stable, and is assessed at $49,000.

Kitto Heads Simplicities.

W. H. Kitto has been elected president of the recently organized Simplicities Automobile Co., of Middletown, Conn. The new company will occupy the old Worcester cycle factory in William street. This week Kitto issued to the company a bill of sale of all parts, pieces, cars complete or in the course of construction at the factory of the company, and conveyed all the patents owned by him, granted or pending, and also the goodwill of the business.

Monnier Changes His Title.

On February 1 the Monnier Cycle Supply Co., the Detroit jobbing house, will become the Monnier Auto & Cycle Supply Co. The change is of name only. The management of the concern and the business will be conducted as it has been for the last seven years, by Charles S. Monnier, who is sole proprietor. With an eye to expansion, Monnier has leased the entire building at No. 68 Congress street, East, and the upper portion of No. 66 Congress street, East.

Smith Goes to Cleveland.

George H. Smith, formerly with the Packard branch in New York, has become manager of the Automobile Storage & Repair Co., Cleveland. W. C. Anderson, former sales manager of the Columbus Motor Vehicle Co., will be his right hand man. The concern will continue to handle Cadillacs, Autocars and Packards.

Iowa Jobbers Enter Trade.

The Iowa Automobile & Supply Co., which was organized a short time ago, has leased all of the old Western Newspaper Union building, in West Fourth street, Des Moines, Iowa, and will enter the jobbing trade. This means, of course, that a full stock of accessories will be carried.

Trout Goes With Reliance.

George Trout has been appointed sales manager of the Reliance Motor Car Co. He brings to the office ripe experience, gained in the service of the Ford, Kirk and Sandusky concerns.

ENGINEERS ORGANIZED

Licensed Association's Factory Heads Finally Choose Leaders and Outline Plan of Action.

By the election of Charles Clifton, treasurer of the George N. Pierce Co., as temporary chairman, and Karl Almquist, chief engineer of the Worthington Automobile Co., as permanent secretary, the mechanical branch of the Association of Licensed Automobile Manufacturers finally assumed definite shape on Thursday last, 19th inst. The meeting for the purpose was held at the association's offices in New York on that date.

At the same time a committee of four, consisting of A. L. Riker, H. G. McComb, H. P. Maxim and John Wilkinson, was appointed to select subjects for discussion and the men to handle them; for it is the purpose of the branch to carry forward the work in a manner corresponding closely to the work of the Society of Mechanical Engineers, for example—the writing of papers on the vital problems of the day, as far as motors and automobile construction is concerned. The discussion of these papers and addresses by prominent engineers and experts on the theoretical principles underlying the problems to be worked out practically are included in the scope.

It is also not out of the range of possibilities that certain principles may be worked out experimentally under the auspices of this section of the association, and that knowledge may be acquired by them which will become of vital importance to the members of the association. Frequent meetings are to be held, and as the section has the hearty support of the commercial end of the business nothing seems necessary to insure its usefulness.

Wayne Gets More Room.

The Wayne Automobile Co., Detroit, Mich., has secured an addition to its factory in the building at No. 121 to 129 Champlain street, that city. The company will continue the manufacture of cars at its Franklin street factory, and the new place will be used as a storeroom.

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PHILADELPHIA SHOW OPEN

"Full House" of Exhibitors, but Blizzard Weather Has Affected the Attendance.

Monday evening, following closely on the heels of the New York exhibit at the Garden, the first of the succession of local shows, which will extend well into spring, opened in Philadelphia under the auspices of the Automobile Trades Association of that city. A large number of the prominent makers were well represented by fitting and effectively decorated displays made, in the majority of instances, by their local representatives, and the First Regiment Armory, in which the show was held, was crowded.

Demonstrating cars were greatly in evidence from the start, and though activities in this direction were brought to a sudden halt during the middle of the week by the advent of the storm and snow-blockaded streets, operations were resumed immediately after, despite the high wind and biting weather, which made riding anything but a pleasure—in an open car this partook more of the nature of torture than otherwise, and short demonstrations were the rule, for not even the most enthusiastic would-be buyer was anxious to insist upon a long ride.

Well over a score of different makers exhibited from one to three or more cars, with here and there an exhibition chassis, which, as usual, formed the nucleus of the inevitable admiring crowd in every instance. The motor bicycle is in evidence in several exhibits, and the sundry dealers, with their assorted collections of anything and everything in the way of specialties for the automobile and the automobilist, flourished like the proverbial green bay tree. It is matter for remark that, in spite of the overwhelming attraction offered by the large cars and the highly polished chassis, clearly showing the modus operandi of the internals which the spectators never seem to tire gazing at, the booths of the sundry dealers always manage to have an interested assembly before them, and it must be admitted that these enterprising members of the fraternity always have something new and novel that is worth seeing.

Practically every automobile dealer in the Quaker City put in appearance at his exhibit, some of them having no necessity to draw on their agency cars for display purposes, as some of the New York exhibits were transferred in toto. While the main floor of the armory provided excellent facilities for showing cars, so far as it went, the exhibits were somewhat crowded for space, and many of the smaller exhibitors were compelled to show in the company and officers' rooms. This is the fourth annual show, and, judging from the attendance on the first evening, it will greatly surpass all previous attempts in this direction, both from the exhibition point of view and the amount of business done.

Cars of various types, with here and there an exhibition chassis, were exhibited by the agents of the following makers:

Winton Motor Carriage Co., Knox Automobile Co., E. R. Thomas Motor Co., Packard Motor Car Co., Elmore Mfg. Co., Pope Mfg. Co., Olds Motor Works, The Locomobile Co. of America, Haynes-Apperson Co., White Sewing Machine Co., The Autocar Co., Waltham Mfg. Co., Cadillac Automobile Co., Ford Motor Co., Buick Motor Co., Maxwell-Briscoe Co., Eastern Automobile Co., Black Diamond Automobile Co., Quaker City Automobile Co., Keystone Motor Car Co., Reo Automobile Co., Rose Automobile Co., John Wanamaker, Penn Electric Vehicle Co., Chadwick Automobile Co., Crawford Automobile Co., Simplex Automobile Co., Premier Motor Mfg. Co., Darracq Automobile Co.

The sundry makers and dealers, tire manufacturers, etc., many of whom were forced to fit up booths in the company and officers' rooms, were as follows:

C. E. Miller, supplies; Atlantic Refining Co., oils; E. J. Willis, supplies; Cushman Motor Co., Cushman motors; Twentieth Century Mfg. Co., lamps; Rose Mfg. Co., lamps; Gray & Davis, lamps; S. F. Bowser Co., gasolene outfits; Raffex Flash Light Co., of Passaic, N. J.; Mobiloil Co., oil.

The motorbicycles exhibited were the Indian, Racycle, Light, Mayo and Thoroughbred.

The latest advances in tiremaking were shown by the Hartford Rubber Works Co., Diamond Rubber Co., B. F. Goodrich Co., Fisk Mfg. Co., Firestone Tire & Rubber Co.

Suits and More of Them.

Clyde P. Warner has brought a suit for replevin in the Superior Court at Chicago to recover an automobile which was seized by Constable Louis Greenberg. The action is the outgrowth of an injunction suit filed several months ago by Everett G. Eberhart, who owns the machine, asserting that Greenberg had seized the machine upon executions obtained against C. H. Hurlburt, the former owner. Eberhart asserts he purchased the automobile from Hurlburt, and afterward gave it to Warner for the latter to sell. It was while the machine was in Warner's possession that Greenberg is alleged to have seized it.

Seneca Falls has Hopes.

If present plans do not miscarry and sufficient stock is subscribed for to warrant its moving there, Seneca Falls, N. Y., will have a new enterprise in an automobile factory. The Syracuse Automobile Co. is given as the title of the concern that is anxious to locate at Seneca Falls.

Jacob Pfleigel, of Brooklyn, N. Y., will erect a garage on Stewart street, that city. The building will be a one story brick, with a fireproof gravel roof.

NAMES THE DELINQUENTS

Many Automobile Concerns Included in New Jersey's Lengthy Annual "Blacklist."

Former Governor of New Jersey Franklin Murphy made his annual housecleaning among the corporations chartered under the New Jersey laws before his term expired, and as a result 1,300 of these concerns are without a "legal" right to continue business.

The list of corporations that failed or neglected to pay the State corporation tax has just been published, and the following, connected with the automobile trade, are mentioned in the list: Automobile & Marine Power Co., Automobile Patents Exploitation Co., Automobile Transit Co., Church Automobile & Specialty Co., Du Bois Automobile Agency, F. L. C. Martin Automobile Co., Forest Automobile Co., Gasper Motor Co., Henrietta Motor Vehicle Co., Hercules Motor Co., Hird Cushion Tire Co., Hogan Motor Co., of West Haven, Conn.; Motormobile Co., New Jersey Automobile Co. Branch, New Jersey Motor Carriage Co., New York Motor Vehicle Co., Oldfelt Automobile & Steam Launch Co., Remington Automobile & Motor Co., Rutenber Automobile & Mfg. Co., Sneckner Motor Co., Standard Automobile Co. of New York, Standard Rotary Motor Co., Thompson Automobile Co., Thornycroft Steam Wagon Co. of America, Traction Truck Co., Union Tire Co., United States Tire Inflater Co., Wheel Within Wheel Co., Woods Motor Cab Co. of Detroit, Woods Motor Cab Co. of Washington and Woods Vehicle Co.

Replacing the Speaking Tube.

Paris coachbuilders are at present making a feature of the various systems of communication between a passenger in a closed vehicle and the driver. The best of these, if the ordinary speaking tube be placed momentarily aside, are those worked by a small electric battery. Inside the automobile is a keyboard with a number of knobs, under each one of which is written some command, such as "home," "left," "right" and "turn." These correspond with an indicator on the dashboard immediately in front of the driver. When a knob is pushed a bell rings, and the order in question is seen on the glass of the indicator in illuminated letters. Thus the device is equally practical either by day or night. One of them recently was shown in this country on a Mercedes car brought over by Mr. Theo. Kearney, of Fresno, Cal.

Columbus Sues the Railroad.

The Columbus Motor Vehicle Co., Columbus, Ohio, has sued the Pittsburg, Cincinnati, Chicago & St. Louis Railroad Co. for $1 200 for alleged improper delivery of a Dumont car.

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TALE OF TWO DOCTORS

Told in Court it Wins Verdict and Brings Out Some Interesting Evidence.

That a balky automobile and a refractory horse are much the same in the eyes of the law was the substance of a decision rendered by Judge Williams, in Milwaukee, Wis., in an interesting damage suit against the B. & P. Co., from whom the Drs. P. H. and J. J. McGovern purchased an automobile two years ago.

The McGovern doctors bought the car from the B. & P. Co. two years ago, and because, as they claimed, the machine balked, suit was instituted against the automobile company for $750, the price of the machine, and $1,000 damages. The suit was a long drawn out one, in which much "expert" testimony concerning automobiles was brought out by both sides. Dr. P. H. McGovern, in giving his experience, said that a machine of a make especially consistent with physicians' demands had been contracted for, but on steep grades with this particular car there would result "patient and patience losing trouble." He detailed some of his woes.

But the principal witness for the plaintiffs was Dr. Ralph Elmergreen, former president of the Milwaukee Automobile Club. Dr. Elmergreen qualified as an expert after stating that he had been "soaked" several times and spent $7,000 to learn what he knew about the things he was called to talk about. His testimony was interesting, to say the least.

"It has done me good," said Dr. Elmergreen, "to see the doctors working, swearing and sweating. A 4 horsepower engine on a 1,250 pound machine will have about the same results to the machine as a 50 pound man doing eighteen hours' work a day will have on the man. The machine in question was worth about $150 to a man of my experience to-day. I did not always have it. To a 'sucker' the machine might be worth from $750 to $1,500. A horseless carriage is one in which the body is built to suit the engine; in an automobile the engine is suited to the body of the machine. The McGoverns' automobile does not come under either classification." Dr. Elmergreen then told the court what he "thought" about the McGovern automobile.

"We don't want 'thinks'; we want 'facts,'" thundered the court.

"Well," was the answer, "we have to think a whole lot about automobiles."

E. E. Warner, of the defendant company, then took the stand. He said: "I do not consider that the Drs. McGovern have sense enough to run any machine. They would not follow my directions, and several times applied the high speed clutch when I told them not to do so. I have gained my knowledge of automobiles by actual experience in the shop." Pressed by the attorney for the plaintiffs to give the horsepower of an engine with a 6½x9-inch cylinder, he said he could not do so, and added by way of explanation that no man could do such a task. When he first went into the manufacture of automobiles he had no designer, he said, but had copied his designs from those of other manufacturers.

After carefully listening to the testimony on each side Judge Williams rendered this interesting verdict:

"I consider a balky automobile the same as a balky horse—neither is worth very much. An automobile is an article which is ordinarily desirable only on account of its commercial value or its mechanical fitness for the uses for which it is made and sold. I have no power to unmake the contract, but judgment should be entered for the difference between the real value of the machine when it was sold, $200, and the value as it had been warranted, $750."

By the decision the Drs. McGovern recover $550 of the purchase price and retain possession of the automobile, at an exceedingly low cost of $200, and after two years' usage.

The Week's Incorporations.

New-Haven, Conn.—Ochsner & Sons' Company, under Connecticut laws, with $15,000 capital; to manufacture automobile appliances.

New York, N. Y.—United Motor Car & Supply Co., under New York laws, with $25,000 capital. Incorporators—E. D. York, F. N. Whitney and H. F. Wells.

Elmira, N. Y.—The Watrous Automobile Co., under New York laws, with $10,000 capital; to manufacture automobiles. Incorporators—T. S. Watrous, H. R. Brate and S. B. Clarke.

Baltimore, Md—The Auto & Moto Co., under Maryland laws, with $7,000 capital; to rent automobiles, launches and motor machines. Incorporators—N. Tip Slee, Bonio H. Bittle, Julius H. Wyman, Otto Kubitz, Milton C. Davis, E. Clay Timanus, and W. Bernard Duke.

Bridgeport, Conn.—The Miller Motor Car & Supply Co., under Connecticut laws, with $2,000 capital paid in; to deal in motor vehicles and supplies. Incorporators—Willard R. Miller, Alma E. Miller and Edward M. Wells.

Garage for Electrics Only.

Trenton, N. J., is to have a new garage for electric machines only, to be conducted by Wilbur Dorsett and W. G. Osborne. The proprietors will protect their patrons by carrying insurance policies on all automobiles stored with them.

Leaving Detroit for Lansing.

The Wilson-Hayes Co., manufacturing automobile supplies, will move its factory from Detroit to Lansing, Mich. They will occupy the factory just vacated by the Reo Motor Car Co.

ST. LOUIS HAS A SECRET

Million Dollar Factory Being Erected, but Deep, Dark Mystery Surrounds it.

St. Louis County, Mo., is to have a million-dollar automobile factory near Kirkwood, and work has already been started upon the buildings, but for some unaccountable reason the greatest secrecy has been observed in all the transactions. The enterprise is being promoted by A. L. Steinmeyer, of the Peyton Investment Co., who declares the enterprise is being financed by twenty New York and Boston capitalists.

A tract of twelve acres, one and one-half miles south of Kirkwood, includes the purchase, and to keep the purchase of the land a secret the deeds to the property were made out in the names of young women stenographers in Steinmeyer's office. The main factory building, which is now in the course of construction, occupies a ground area of 300x300 feet, and will be three stories high. An office building will also be erected on a plot of ground, 50x90 feet. Contracts have been let for the construction of 140 cottages, and from this it seems that the workmen will be expected to live on the premises. Steinmeyer refuses to give out any particulars, except that the car the company proposes to manufacture will be of the gasolene type.

Lorain to Branch Out.

The Lorain Automobile Co., of Lorain, Ohio, composed of Frank Floding, F. S. Rathwell and H. Fredericks, will branch out in the spring and make a bid for business in four counties instead of one. The firm has the agency in Cuyahoga, Lorain, Erie and Huron counties for the Elmore Mfg. Co.'s Pathfinder car, and will open a permanent store in Cleveland in March.

Kaestner Elects Officers.

The Charles Kaestner Mfg. Co., South Bend, Ind., making automobile engines and supplies, has elected these officers: President, John G. Libstein, jr.; vice-president, Adolph Kaestner; treasurer, Edward B. Reynolds; secretary and general manager, Charles D. Cutting; directors, J. G. Libstein, jr., E. B. Reynolds, C. D. Cutting and Otto Knoblock.

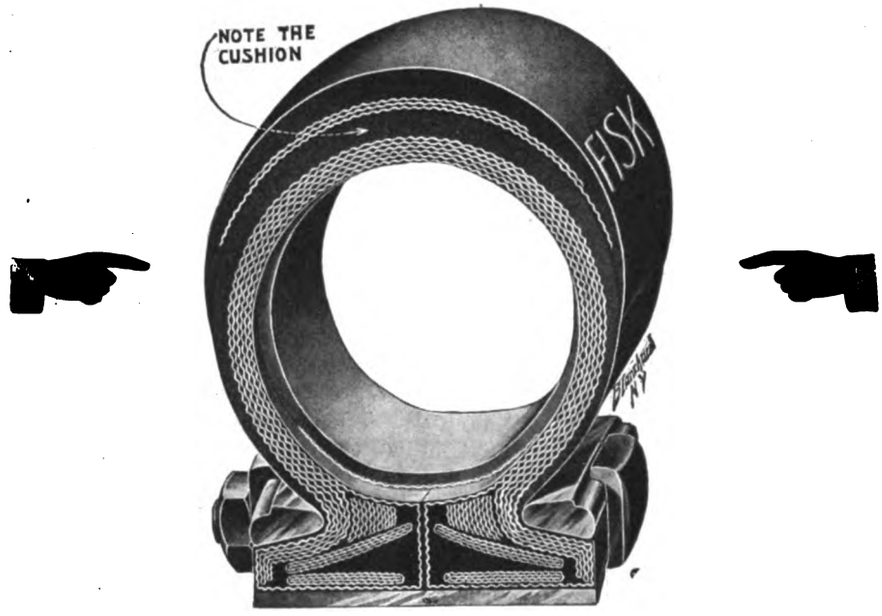
Hartford Chooses Directors.

The Hartford Motor Machine Co., of Hartford, Conn., has elected the following directors: James M. Thompson, Samuel E. Elmore, Henry Farnham, R. Ballerstein, Arthur D. Coffin, John W. Hatstat, John S. Hunter, John T. Collins and Gilbert W. Chapin.

Will Move in March.

The Wilmington Automobile Co. has secured the agency in that city for the Winton and Autocar. The firm will move from its present location, in Orange street, to Tenth street, in March, when they will stock up with the new cars.

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THAT FISK TIRE

is an

INDEX

TO THE QUALITY OF THE CAR.

ITS COST

due to the use of only the very best materials procurable, and the expensive process of production, coupled with its life-preserving fastening, are such that only those automobile manufacturers who place

REPUTATION BEFORE PROFIT

will use it.

Our new Booklet deals fully with the subject.

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LONDON, ENGLAND

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To Facilitate Matters Our Patrons Should Address us at P. O. Box 649.

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NEW YORK, JANUARY 26, 1905.

How Values Govern Price.

The many who are confidently predicting a great lowering of prices in the automobile field with each passing year and awaiting the time when a good machine will be within the reach of all who would buy, will be sorely disappointed to note that, despite an increasing demand, prices are climbing higher.

This apparent anomaly is readily explainable by the fact that it is not merely an increased demand, but a call for a higher powered and at the same time a more luxuriously fitted type of car, that accounts for the rising figures. Up to the opening of last year 16 to 24 horsepower was deemed to be the limit in this direction for heavy touring cars; now the question of power has been reversed to the extent that last year's maximum, 24 to 30 horsepower, is practically this year's minimum and 40 to 60 horsepower cars for touring purposes form an item of the lines of several prominent makers.

Great advances in body making, more luxurious fittings and a much more general demand for weather protection such as is afforded by the various styles of tops or entirely inclosed bodies further account for advances.

Two years ago $5,000 and $6,000 were considered top notch figures for the product of the American maker, and it was confidently predicted by many that these would go down at least 50 per cent before strenuous efforts at cheapening. Quite the reverse has come to be the established fact, however, and no astonishment is now manifested at $10,000 for a stock car. For those who aim to be unique in the matter of price paying—and there are enough included in this category to make it profitable for a few manufacturers to cater to their whims—there is no longer any necessity to look abroad for something over this figure; anything can now be had of the American maker, who need acknowledge no superior, and 45 per cent of the price won't be Dingley tariff, a costly part of the imported machine, that aids neither its looks nor its speed, and doubles the expense of replacements, which likewise have to be imported.

So far as this applies to the heavy touring cars of increased power, there can be no gainsaying the fact that prices are way up, but they have not been increased. More expensive cars have been turned out, and from a perusal of the above standing alone it would seem that the automobile was to all intents and purposes solely within the purchasing power of the wealthy.

But when the great range of prices at which serviceable cars can now be had is considered little reason is apparent for waiting indefinitely for prices to be lowered before purchasing. On the standard types of runabouts, light and heavy touring cars of the classes put forward very largely last year, numerous improvements have been made in all directions, without any increase in price, and this applies equally to practically all machines listing between $450 and $2,500; above the latter figure, such as $3,000, $3,700 and $5,000, many radical innovations involving great expenditures on the part of the manufacturer to bring them about are in evidence, though the figures remain the same. It is in the creation of new types to sell at the last three mentioned figures, as well as above the $5,000 mark, that larger prices are apparent. The touring car which sold at $2,500 last year can still be had in improved form at the same figure, and, with greater power and added refinements in the way of more luxurious fittings, it is priced $1,000 or $1,500 higher. The man who is looking for a car this year as an entrant into the fold will find that he can suit his taste and purse without any great difficulty, and if he buys a standard make he will receive in return a machine that not only in appearance but service and comfort will amply repay him for the investment. As to the man who has already been the owner of a car for a year or more, he needs no advice.

French Sportsmanship!

It certainly would be interesting to discover the process by which the promoters of that French "consolation race," styled the Grand Prix, arrived at the "relative importance" of the automobile industry of this country.

France, Germany and England are placed in the front rank, while the United States are placed in the same class with those little splashes on the map of Europe—Italy, Belgium, Austria and Switzerland. It suggests that the Frenchmen are either handing out a left handed insult or are unconscious jokers or monumental ignoramuses, at least so far as concerns the volume and extent of the American industry.

But, then, the whole race is something of a joke, if not a studied attempt to tear down the importance of the Bennett Cup contest. The idea of giving a lot of "also rans" what practically is a surreptitious chance to defeat those who had already defeated them may be a French idea of patriotic commercialism, but it violates the rule and spirit of real sportsmanship. When the Frenchmen display such false colors it is time for the rest of the world to protest and to hold aloof and for Mr. Bennett to withdraw his cup. It looks as if France is determined to win or to have the hog's chance of winning, regardless of price and decency.

Alcohol and Gasolene.

In Great Britain they are beginning to seriously advocate the necessity of a "home supply" of fuel, and to suggest that every car owner should be possessed of sufficient patriotism to throw off the yoke of Rockefeller by looking into the advantages of alcohol as a motor fuel and discarding the present odoriferous explosive medium. It constitutes a significant state of affairs.

Alcohol has many advantages over gasolene, from almost every point of view, and

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about the only reason why it has received so little attention in this country is that it would be just about as practical to advocate the use of cologne in the cylinder; one could be had about as cheaply as the other. Chief among the points in which it rises superior to present day fuel are its far greater safety, its property of being miscible with water, which presents great advantages, and its greater heat value, not to mention its lack of objectionable odor.

Germany took the subject in hand officially almost a decade since, and the extent to which it has progressed in the empire is startling to those who have not had an opportunity to investigate, as the figures presented in another column serve to show.

France also has investigated the matter somewhat thoroughly, and has produced alcohol motors for the automobile which have given satisfaction; a number of them were shown in a special exhibit in Paris two or three years ago. A general impression prevails, however, that, nothing further of note resulting as the outcome of the exhibit, the subject has been dropped owing to the failure of this fuel to fulfil expectations; but this is not the case. The impression is probably due to the fact that a very large percentage of the cars manufactured in France being marketed in foreign countries would have necessitated the production of two separate types of cars, one for home use and one for export, as alcohol as a fuel is obtainable only in Germany and France. The former country now produces more denaturized alcohol for commercial purposes annually than the United States does of wood alcohol in a quarter of a century, taking the present rate of production in each case as a standard for comparison. As a result the price is such that the new fuel is proving a sharp competitor of the Rockefeller product, of which millions of gallons are annually exported to Germany, and it is not a matter of a great many years before the industry should be strong enough to place the empire as a whole in the position which the government has sought to bring about by the fostering measures in question—entirely independent of any outside source of supply of fuel of this nature.

If the price of gasolene is to soar every time a new endowment is to be handed out it may not be wholly surprising if the matter of alcohol should claim increasing attention even in this country. Potatoes, sugar refuse and the like form the basis of the materials used for distillation in Germany, and the process employed is so simple that every farmer makes alcohol for the market and his own use. The former and several similar materials of like nature should be capable of production very cheaply on a large scale in this country, so that there is little reason why alcohol at 12 to 20 cents a gallon should not be a possibility here.

Valves, Automatic and Otherwise.

Although the adherents to the automatic principle as applied to valves have supported their contentions with numerous, to them, irrefutable arguments, there have been, none the less, many defections from the ranks, and the mechanical valve is steadily gaining ground.

The theory of the automatic inlet valve has been demonstrated not to be a constant factor, in that the action of the valve varies with its speed and that it is practically impossible to provide it with a spring which will overcome its vagaries under all conditions. The adjustment of the spring tension of an automatic valve is a delicate matter, as on the latter depends the amount of the charge drawn into the cylinder. Should the spring be weak the suction of the piston will permit the entrance of a large charge of gas, but, on the other hand, by not closing the inlet openings as fast as would be the case with a much stronger spring, part of the charge is forced back into the inlet pipe. Thus a strong spring is essential to a rapid closing of the inlet the moment the piston reaches the end of its stroke, but too much tension prevents the ready opening of the valve. This again is varied by the speed, as at a low speed the valve remains open longer, and not only is there ample time to admit of a full charge being drawn in, but the weak spring has likewise a greater latitude in which to shut.

From this it will be apparent that the higher the speed the less time is allowed for the opening and shutting of the valve and the admission of the gas, and it has been ascertained that this is not always absolutely in proportion to the number of revolutions per minute, as must perforce be the case with the mechanically operated valve.

The lift of the mechanical valve remains the same regardless of the speed, and a strong spring closes it the moment it is released by the turning under of the cam. To overcome the necessity of too long a lift in the case of engines of large capacity, two or more valves are fitted to the same stem, a practice adopted by Panhard and other foreign makers. The shortcomings of automatic action due to the varying pressure of the spring have seemingly caused this form of inlet to be regarded with disfavor.

COMING EVENTS.

Jan. 23-28—Ormond-Daytona, Fla., third annual speed carnival.

Jan. 23-28—Philadelphia, Automobile Show.

Feb. 4-11—Chicago, National Show, Coliseum.

Feb. 13-18—Detroit, Automobile Show.

Feb. 20-25—Cleveland, Automobile Show, Gray's Armory.

March 6-11—Buffalo, Automobile Show, Convention Hall.

March 13-18—Boston, Automobile Show, Mechanics' Hall.

March 13-18—Boston, Importers' Show, Symphony Hall.

March 27-April 5—Washington, Automobile Show.

The door has been opened, and it is now possible for any donor of a trophy, whether he sells whisky or prayer books, to name his own race committee and practically his own rules. There was as much reason in the appointment of a "commission" to direct the contests for the "Scotch Highball Cup" as there was for one to control the Vanderbilt or dozen other trophies given for the Ormond-Daytona meet, which is to say that there was no reason at all, and, worst of all, of a commission composed chiefly of men who are not automobilists. When the A. A. A. permitted a cunning ex-professional six days' bicycle racer with an interesting record, to dictate, or partly dictate, terms, it was guilty of a weakness unworthy of the men who compose it. Courtesy is a very pretty quality, but the blunt truth of it is that Sir Thomas Dewar was lacking in courtesy to permit such a situation which one word from him would have relieved and merited none in return. He might easily have remunerated his chief trustee and press agent in some other way.

Frank Croker was a real sportsman—an American sportsman, for the love of the sport which brought his untimely end. His love of it was as patriotic as it was unprofessional. He had faith in the product of his own country, and evinced his faith by his works. His loss leaves a void. There remain few of his kind.

If gasolene in the tank of an automobile is "freight," as a Federal court has just decreed, what, then, is the air in the tires?

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"GREATEST EVER"

New York Show Maintains its Glory to the End—Immense Volume of Business Done—Frost Falls on the Importers.

If ever a lot of tired men earned their rest, they were those whose duties required them to spend last week at Madison Square Garden, New York.

When the doors closed on Saturday night on what, in view of recent occurrences, will probably prove the last general show of automobiles in the Garden, the exhibitors, with few exceptions, had double cause for thanksgiving—first, for the unprecedented volume of business transacted during the week, and, second, that the week's work was over. For, as a matter of fact, there never was such another automobile show.

The promise of the first few days held true to the end. All day and all night—that is, until 11 o'clock—the big building was fairly thronged. After 8 in the evening it was literally packed. There was no diminution of the attendance on a single day, on the part of either trade visitors or the general public. The former were present in astonishing numbers. The dealers came from everywhere—from as far South as Louisiana and Texas; from as far West as California. There were few States in the Union unrepresented.

As very many of them had placed orders for their 1905 goods weeks before, the presence of many of them was at first difficult to comprehend. As the week wore on, however, it was made plain, and another and newer side or influence of the show was uncovered. These dealers from afar were there to definitely close orders with customers with whom they had been dickering, but who would not finally purchase until they had seen and inspected the cars exhibited at the show. This class of purchaser was quite numerously in evidence, and, as a rule, was inclined to the purchase of large cars.

That many of the dealers who came to the show to meet them, and to obtain assistance from the factory staffs who were in attendance on the exhibits, achieved their purpose is well known. As an instance, one dealer sold seven cars to residents of his city who had held aloof until they were able to look over the show.

There has been various and sundry juggling with figures in an attempt to estimate the volume of business transacted, but they are, at best, wild guesses and serve no purpose. It is beyond doubt, however, that the 1905 show, from the business standpoint—and from the attendance standpoint as well—was far and away the most profitable ever held.

"We did more business on the first day of the show than we did during the whole week last year,' was a remark that became so common as not to excite comment. In a few instances a Motor World man was privileged to see the order books of some of those who made this assertion, and is able to vouch for the truth of the statements. The sales simply exceeded the wildest estimate that might have been formed, and the exhibitor who did not obtain his share of the business has either himself or his product to blame for his empty-handedness.

While the runabout was not wholly overlooked, it is certain that the major part of the business transacted was in those cars listing at $1,500 and upwards, and with specifications for March, April and May deliveries. The big cars were the objects of the most interest, and the demand for them points unerringly, as the Motor World stated last week, to the beginning of the end of the imported product.

Not a few of those manufacturers who, wholly or largely, disposed of the outputs which they had planned to produce for the year, left the Garden full of that enthusiasm which took the form of a resolution to revise their plans and increase their outputs. It is probable, however, that, after reaching home, most of them have found cause for reflection that will bring them to decide to move circumspectly in that regard.

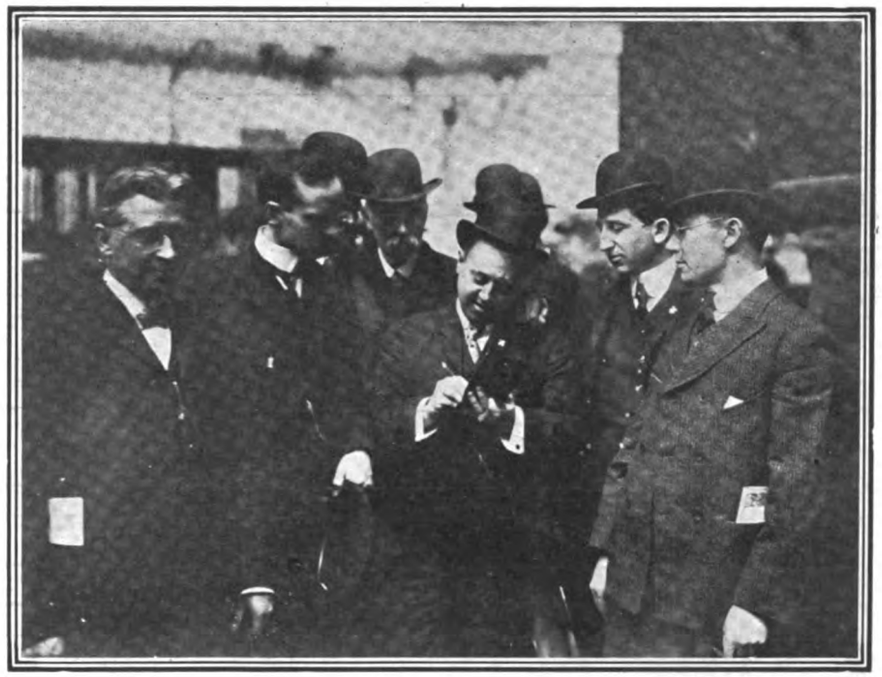
The crowd that attended was a free-handed crowd—how free-handed is instanced by the unverified remark of a waiter in one of the better known hostelries.

"The automobile crowd beats the horse show crowd," he is alleged to have stated. "I made $106 in tips during the week, where I never made more than $40 during the horse show."

Everything combined to make the show "the greatest on record." The weather itself throughout was simply superb. It was of the "made to order" variety, and it was not until late Saturday afternoon that the skies were even flecked with a cloud. At about that time a gentle snow began to fall, as if regretful that the end of the show was at hand.

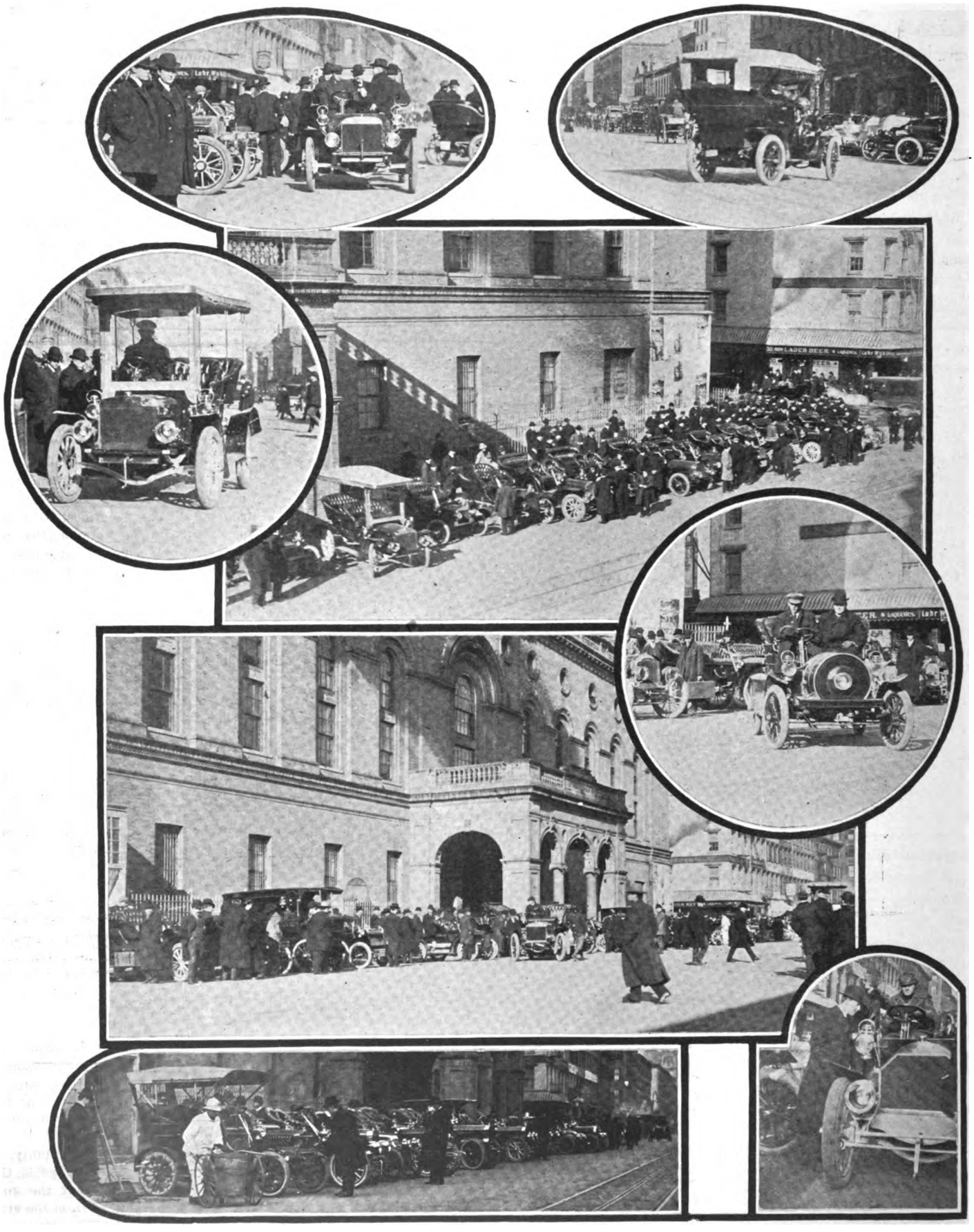
By comparison, the display of imported cars, which opened on the top floor of Macy's dry goods store three days before the opening of the Madison Square Garden exhibit, and continued until two days after it had closed, was a graveyard. It was designed to be a rival of the Garden exhibit, but to term it "rival" is to employ sacrilege in its most sacrilegious form. A pretty sum was spent in newspaper and billboard advertising; but not even the nude in art nor the most zealous and liberal efforts of the Franco-American New York Herald served to attract the American public to what was, at first, grandiloquently called "Imported Salon," which style, however, in the frenzy of the last few days, gave way to "Foreign Automobile Show."

There were tall stories printed of immense sales made to prominent personages, but they all should be well salted and well peppered before being swallowed. One afternoon, when Madison Square Garden was almost packed to the doors, by actual count the number of people attending the display on the top floor of the Macy store was exactly twelve. On another afternoon, when the same conditions existed, there were twelve people in the "Salon." The frost crunched beneath their feet, and their footfalls awoke echoes in the almost deserted hall. The speculation which is now going the rounds of the trade is: Who is to pay the freight?



J. H. BECKER TOTALING THE ELMORE SALES ON SATURDAY.

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THE DEMONSTRATING CARS OUTSIDE THE GARDEN DURING THE NEW YORK SHOW.

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TIME TO BREAK AWAY

So Says Souther Regarding Copying of Foreign Ideas—Sifting of the Show Brings Much More to Light to Justify the Advice.

The most startling thing of all in the whole New York Show was the Shattuck transmission. It has not been worked out practically for automobile application, and it may never do. There may be something about it which will prevent, but it is startling, interesting, hard to understand and most enticing.

The principles are applicable to both bevel and spur gears. The principle is that the pinion is carried up a cone of stepped gears, climbing from one to the other without stopping, jarring, or any possible interruption. It may be shifted to the high speed running slow or fast.

To think it out, as Mr. Shattuck says, was a nightmare, but the product is something more substantial than that produced by a nightmare. It is to be hoped that Mr. Shattuck will apply this to some well known automobile and give the engineers interested in transmission gears a chance to see how it works.

It was apparent from inspection of the air cooled motor exhibits that this type of engine had received more attention as to the location of valves than the water cooled type. This is natural, because it has undoubtedly been forced upon them. Every detail that will tend to keep an engine cool must be taken advantage of by the maker of an air cooled motor.

Consequently, we find valves in the air cooled machines very close to the cylinder proper, doing away with all extra metal and resulting in getting a charge into and out of the cylinder quickly and reducing the cooling proposition to the best possible basis.

The point to be made is this—that what is good for the air cooled type is just as good for the water cooled type. It is just as important for the water cooled engine maker to run his engine cool as it is for the maker of an air cooled engine. Otherwise, the pump, the radiator and the circulating system must be larger than would be necessary if he did so.

Some of the makers of the water cooled type have fully realized the importance of compactness of the cylinder at the top of the stroke. Take, for example, the Welch and the Peerless. They have carried this idea to an extreme, and a good extreme, at that, it will be found before the industry is much older.

The arrangement is not as neat looking, perhaps, because it necessitates bringing the valve cam shaft up on top of the cylinder somewhere, or else to have what seems to be a complicated series of levers to operate the valves. When you stop to think of it, it is just this reason that has produced a bad location for valves. The desire to get something neat and easy to build was so great that an uneconomical and inefficient arrangement was arrived at. The time for building something pleasing to the eye, rather than something correct from an engineering standpoint, has gone, and the old saying will apply, that "Handsome is as handsome does."

In connection with this point, it is to be noted that our engineers are too prone to copy what the Europeans are doing. For example, if the Mercedes or the Panhard makes a change in the location of their valves, our engineers are liable to follow. The time has arrived for this to cease. We have no means of knowing why these people change from one type to another. It may be for commercial reasons, it may be for the sake of a talking point, and it may be to suit European fashion. None of these reasons are weighty enough to affect a good engineer.

The only reason that ought to make any engineer change is because he actually finds some one type better than another type. It is up to the engineers to test carefully and systematically what location of valves gives the best efficiency, and abide by their own findings, and build that which does give the best efficiency, just exactly as the steam engine builders have been forced to build, and have built what has been proven by careful investigation to be the best construction.

Here we are beginning to follow and are following the Europeans in the matter of magneto ignition. The questions arise at once, are we following in the right direction? Is it as good as they think it is? How do we know?

Is it not time for somebody to get to work and make some tests, and absolutely establish which of the two systems is superior on any given engine? There ought to be a sound reason for every mechanical change made.

There has been a long period of guessing and copying. It is about time another method of arriving at the results be adopted.

In the Phelps exhibit at the show there was one motor found hung upon springs. A cross spring under the front end of the engine supported it, the rear support being in a long cylindrical tube, which led back to the rear axle. It is a three cylinder engine, ignited by a "make and break" of very simple construction, the needle making the spark being removable and very light, which is certainly good practice, as inertia becomes of importance in rapidly moving parts.

The Phelps lubrication is rather ingenious, too, as it provides a means for maintaining a constant level in the crank case that is exceedingly simple. It works on the inverted bottle principle, the opening being at a proper height in the crank case, and a small three pint tank fastened to the side of the engine, sealed tight, of course, by a proper cap. This tank feeds oil to the crank chamber whenever it is needed—that is, whenever the oil in the crank case uncovers a small opening a bubble of air rises up and lets down an equal amount of oil. There is no other lubrication on this engine, which makes it neat and clean, to say the least. The principle of transmission involving individual clutches has been worked out in this machine to a very nice point. In the first place, the transmission case and bevel gear case are one near the rear axle, of course. Each transmission gear has within it an expanding bronze friction band, operated by cams. Release is positive, and there is no chance of centrifugal force throwing the clutches into action, inasmuch as a lever is so arranged as to counteract this action.

One maker, the National, deemed it advisable to adopt extraordinary measures for safety as far as the steering mechanism was concerned, and in place of having one cross member between the arms of the steering wheel two were adopted, one in the front and one in the rear. The claim was also made that this gave extreme rigidity and positive steering qualities.

Another innovation appeared in two or three machines—that of carrying the front end of the steering post to a point very near to the front axle, making almost an immediate connection with the steering cross rod. This gave a very slanting steering post, of course, but not objectionably so to look at.

The control of the automobile is as varied as seems possible to make it. In the first place, there is the simple throttle lever which opens the carburetter or valve at some point in the gas system so as to give the motor more or less fuel. Side by side with this is the spark advance independent of the throttle, two levers controlling the machine as far as fuel and speed are concerned.

The next system is where these two levers are united into one, the spark advance with the throttle lever. This seems rather dangerous, because if the engine slows down it will knock, but the secret underlying it is that the engine must not slow down, that the gear must be changed soon enough to avoid it.

The next system is that in which the operator has nothing to do with the igniter whatever, and has a gas throttle regulated by either hand or foot, the spark being entirely taken care of by an engine governor, advancing with an increase of speed and retarding when the engine slows down.

Then there are cases of the governor operating not only the spark, but the spark and the gasolene supply. When the motor slows more gasolene is admitted and the spark is retarded; when the motor speeds up the spark is advanced and the gasolene diminished.

Then comes the additional possibility of changing the tension of the springs in the governor from the seat, so that the governor may be set at any speed from the very slowest to the fastest; then, in addition to this, is the accelerator, which permits the motor being quickly accelerated by means

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of the foot throwing the governor out of action for a minute or more.

There are other combinations of these coupled together in various ways. The operator becomes skilled in the use of any of them, and usually each maker or owner thinks his system is the best because he is used to it. There is one point, however, which is of much importance in the matter of the position of the levers on the wheels, whether they take the form of levers or handles which turn, or buttons. One may become, as stated, skilled in the use of anything, but the controlling device which can always be found in the same position, without regard to the movement of the wheel, is undoubtedly the simplest and the safest. As the wheel moves around, if the controlling device follows it, the eye must be directed toward it to be sure that the correct controller (spark or throttle) may be seized at the proper instant. At night the hand must follow the wheel around, and by the slow process of touch find it in its changed location.

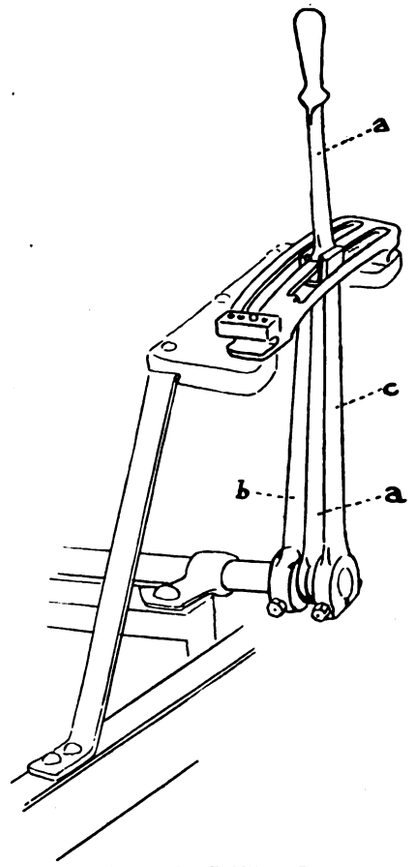
There must be some decided difference in the location between the controllers usually on the wheel, so that it may be recognized in the dark, if not in position, then in "feel." Every one of these objections is done away with in having a controller or controllers in such a position that they do not move and can always be found instantly in the dark or at any time.

There are times when instant action will avert accident, and slow action cause accident. It is just such a simple thing as this which makes the difference between perfection and lack of it.

The question of fuel consumption and efficiency of the motor is undoubtedly pushing to the front. As an evidence of this is the attention being given to the location of the valves in the engine. Very thoughtful men who understand the principles underlying the whole matter are doing their level best to get the gases into the cylinder quickly, get them in cool, so that there will be just as many heat units in a given volume as possible, and, after burning, to get them out quickly. They are accomplishing this by locating the inlet and exhaust valves just as close to the end of the cylinder as is possible. The accessory valve chambers and explosion chambers are done away with entirely.

The radiating surfaces, the crooked passages which tend to wiredraw the gas and heat it on its way in, the large amount of compression space which must be filled completely, the probability of dead gases remaining in the corners and mixing with the good gases, all these points enter into the problem; then, when the gas is once there, attention is being given to putting the igniter where it will meet the gas which is surely fresh and where the explosion will be transmitted immediately to the piston. This principle will be followed to a finish, and it will be undoubtedly found (when the trade realizes the importance of it) by careful tests that the efficiency of the motor has been greatly improved, that the horsepower developed per pound of gasolene will be measurably and appreciably greater.

On the 18 horsepower Columbia is an effective development of gear shifting levers that is at once simple and commendable; it is here shown. One hand lever, A, is made to do all the work done by the two levers used last year. There are really two levers,



The Columbia Shifting Levers.

B and C, the same as last year, but the operator need know nothing of it. By a clever device the hand lever is made to engage either one or the other, as desired, giving three speeds ahead and reverse.

With the advent of magneto ignition comes one disadvantage, and that is the lack of possibility of self-starting with the four cylinder motor.

This very thing may create a demand for some such device as that shown by Mack Brothers. It is nothing more or less than a heavy spiral spring at the front end of the crank shaft, occupying a small cylindrical box at the front of the frame. This has evidently been very cleverly worked out. While idle it does not touch the shaft in any way whatever to wear it. It releases and seizes the crank shaft, no matter in what position the shaft may have stopped. It gives three complete rotations of the crank shaft before exhausting its power. After the engine has got under way, it picks up the spring again, winds it and locks it ready for use. Although this sounds very simple, it is evident that much thought has been put into it to eliminate all the possible objections that might be raised in the way of noise, wear, rattle and its action. For a small sized car the spring is wonderfully compact and unobjec-

HENRY SOUTHER.

Chicago Club Prepares to Build.

Detailed plans of the new clubhouse of the Chicago Automobile Club have just been issued, and the plans call for a splendid structure on Plymouth Place, just south of Jackson Boulevard. The Chicago club now has a membership of over five hundred, and for a long time the members have realized that the present clubhouse at No. 243 Michigan avenue is inadequate to their needs, and a committee was appointed to plan for erecting a new building.

The club has secured an option for a ninety-nine year lease on a lot 96x93 feet, on Plymouth Place, west front, one hundred feet south of the boulevard. It is intended to erect on this site as soon as possible a five story building, to be devoted exclusively to club purposes. In order to finance the proposition the committee recommends the issuance of fifteen year 5 per cent bonds in an amount not exceeding $150,000. These bonds are to be secured by a first lien on the building and the leasehold interest, which extends for a period of ninety-nine years without revaluation. Each club member is invited to subscribe for such amount of the bonds as he may see fit. The work of construction will begin as soon as the bonds have been bought.

In the basement of the building will be located the boilers, dynamo and repair shop. Such space in the basement as is not utilized for the above purposes will be occupied as a garage.

The first floor will be used exclusively for a garage. It is intended to make this feature of the club as perfect as possible, and so to arrange the service as to assure members that their machines will not at any time be tampered with, and lockers will be provided. Inside the garage entrance the plans are such that ladies may ascend direct from the cars to a reception room, where an elevator may be taken to the rooms above.

On the second floor will be located a gentlemen's lounging room, grillroom, billiard room, barber shop, cardrooms and bowling alley.

The ladies' reception rooms, dressing rooms, library and general dining room will occupy the third floor. The fourth floor will contain about twenty-five bedrooms and bathrooms, together with servants' rooms.

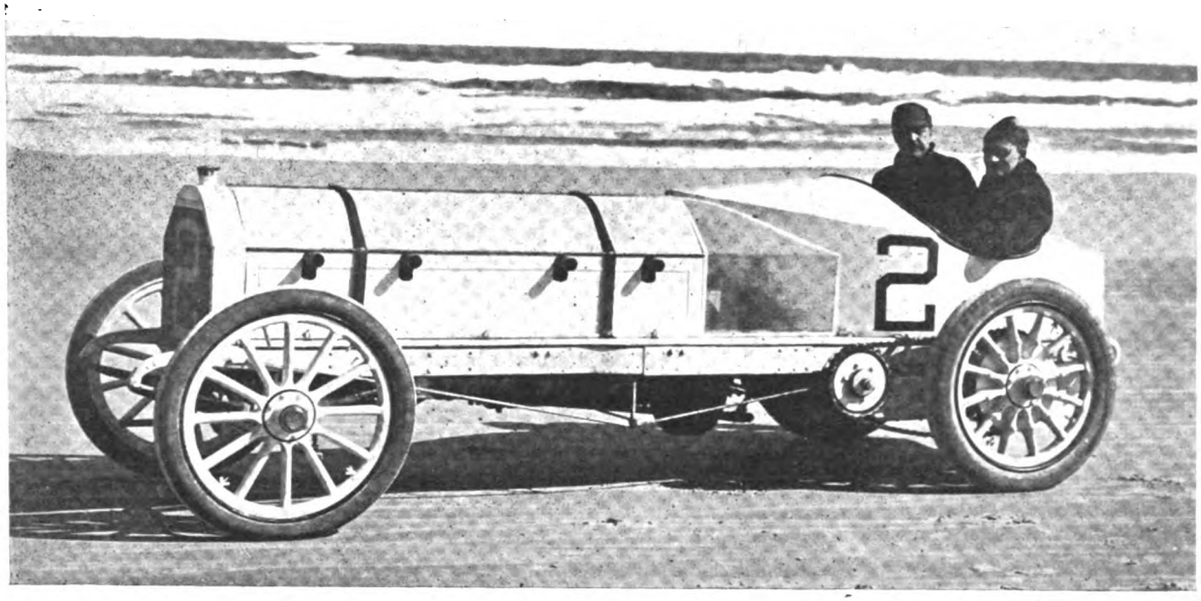
The garage will accommodate about one hundred and fifty cars, and will contain all appurtenances, including a testing room, a storeroom and a room for the use of chauffeurs.

During the two weeks of the Paris Automobile Salon 320,000 people passed the turnstiles. This is an increase of 60,000 over last year. On one Sunday 54,000 people visited the Salon, the highest number for any one day a year ago having been 37,000.

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"Dark Horses" Develop on the Daytona Beach

Louis S. Ross, in his Little American Steam Car, "Plays Tag" with the Imported Monsters and Proves the Sensation of the Meet—McDonald, of England, Gets the Mile and Five Miles Record.



H. L. Bowden, the Waltham Millionaire, in the Most Powerful Machine in America—120 H. P.—Whose Mile in 34 1-5 Seconds, Was Nullified by the Overweight of His Car.

Daytona, Fla., Jan. 24.—One of those "dark horses" that you hear about trotted out to-day and served to make this, the first day of the third Florida speed carnival, memorable.

In reality, the "horse" was not a horse, but a big 90 horsepower Napier racing car, and, of course, it did not trot—it fairly flew over the broad expanse of marblelike beach—flew over the five miles of closely knit sand faster than ever an automobile traveled before. It was driven by a hearty young Englishman of the name A. C. McDonald. He had been here for several days, and, though he had been going great guns in practice, none of the sharps or press agents seemed to fancy him, and he passed unnoticed and unsung.

However that may be, there was no fluke about his performance to-day. He gave full measure. In his first trial he covered the five miles in 3:32, but four-fifths of a second outside of the record held by W. K. Vanderbilt, Jr. He claimed that he had been interfered with and compelled to slacken pace, and accordingly was given a second chance. He deserved it. He "made good" to the tune of 3:17, fairly smashing the old record to smithereens and averaging 39 2-5 seconds per mile.

McDonald's performance was the one bright spot in an otherwise dull and uneventful day. The only other occurrence smacking of an incident happened in the first event, the one-kilometre race. Webb Jay, driving the 15 horsepower White, broke his shaft within two hundred yards of the finish, but he was then so far ahead of his only rival, Le Blanc, in a 20 horsepower Darracq, that he coasted over the line a winner.

Webb's accident disarranged the entire afternoon's programme. He was entered in the next two events, and to give him a chance to repair they were held over.

Charles Soule, in a 30 horsepower Pope-Toledo, and H. P. Maxim, in a gasolene Columbia, were in all other respects the lions of the day. Each of them won two events in hollow fashion. There was no semblance of excitement. The races were the usual runaways.

It is scarcely necessary to say more: you've all seen runaways and know what they're like.

For the first time since the speed carnival was instituted, the races were to-day started from Daytona, and not Ormond. It obliged a lot of the Ormond visitors to travel six miles to reach the starting point, and not all of them relished it. But the scene on the beach while the travel was in progress was an animated one. Every sort of vehicle imaginable was pressed into service. The crowd this year is, of course, much larger than ever before, but when it is scattered over a length of ten miles, it is difficult to arrive at a true estimate of its proportions.

The beach itself was in perfect condition, save at the Ormond end, where soft red sand had been washed up, making the going rather heavy. The weather itself was coquettish. A slight westerly wind blew across the course and piled up banks of clouds, but though the wind died away, the sun played hide and seek. One moment the balm of spring was in the air; the next, the chill of autumn made itself felt.

The summary of the day's sport follows:

ONE KILOMETRE—FOR VEHICLES WEIGHING 851 TO 1,432 POUNDS.

Driver and car.	Time.
Webb Jay, 15 h. p. White steamer	0:14⅘
A. Le Blanc, 20 h. p. Darracq	0:61⅛

FIVE MILES—FOR STOCK CARS COSTING $2,751 TO $4,000.

Driver and car.	Time.
Charles Soule, 30 h. p. Pope-Toledo	5:13⅗
M. Roberts, 40 h. p. Thomas	5:47⅘
John Connell, 35 h. p. Columbia	5:48⅛

FIVE MILES—FOR STOCK CARS COSTING $4,000 TO $6,000.

Driver and car.	Time.
Charles Soule, 30 h. p. Pope-Toledo	5:17⅘
A. Le Blanc, 20 h. p. Darracq	6:22⅛

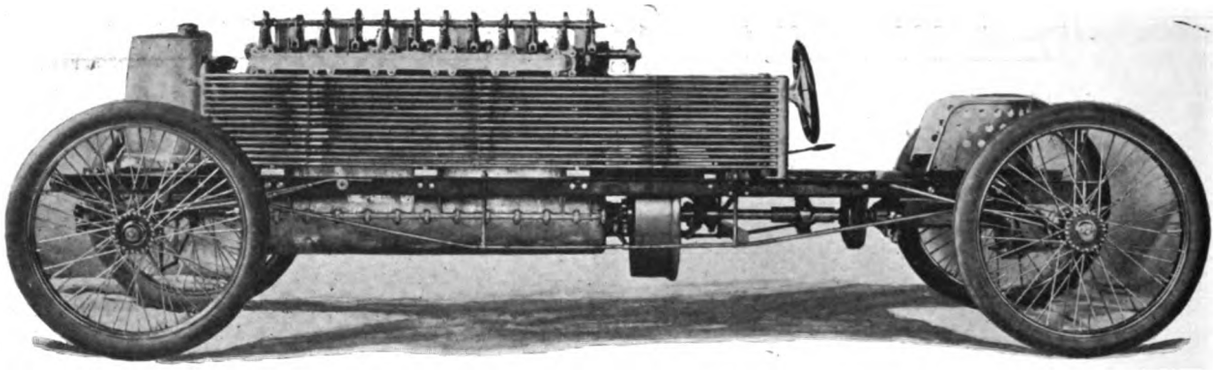
FIVE MILES—FOR STOCK CARS COSTING $651 TO $1,000.

Driver and car.	Time.
Louis S. Ross, 8 h. p. Stanley steamer	6:42⅗
W. E. Evans, 18 h. p. Autocar	8:16
C. N. Wheeler, 12 h. p. Glide	9:34⅛

RECORD TRIALS—FIVE MILES.
(World's record, 3:31⅘.)

Driver and car.	Time.
A. C. McDonald, 90 h. p. Napier..First trial	3:32
A. C. McDonald, 90 h. p. Napier..Sec. trial	3:17
Guy Vaughn, 40 h. p. Decauville	4:32⅘
H. P. Maxim, 18 h. p. Columbia	7:02⅘
M. D. Altman, 10 h. p. Pope-Tribune	**11:39⅘**

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THE FORD RACER.

TEN MILES.

M. G. Bernin, 60 h. p. Renault..... 7:42
Time at five miles, 3:51⅘.

TEN MILES—FOR STOCK CARS COSTING $1,001 TO $1,800.

Driver and car.	
H. P. Maxim, 18 h. p. Columbia.....	1
C. N. Wheeler, 12 h. p. Glide.....	0

Time, 14:12⅘.

FIVE MILES, HANDICAP (STOCK CARS.)

Driver and car.	Time.
H. P. Maxim, 18 h. p. Columbia (1:47).....	7:18⅕
Chas. Soule, 30 h. p. Pope-Toledo (scratch).	7:28⅘
John Caswell, 35 h. p. Columbia (0:35).....	10:35⅘

All of yesterday and the day before the crowds gathered. Every train increased the numbers, until the spacious hotels were full to overflowing. The scenes at both Daytona and Ormond and on the course to-day suggested that a large part of the attendance at the New York show and at the Automobile Club's banquet in the Waldorf on Saturday night had been mysteriously transported to Florida. Familiar faces of men prominent in trade and in club life are everywhere. It may be strange land, but he is an unusual individual who finds himself among strangers. The tragic accident to Frank Croker has rather dampened the spirits of the crowd, but the interest in the races is intense.

In officialdom the Dewar trophy—dubbed the "Scotch Highball Cup"—has been proving a bone of contention. Sir Thomas, who is here and who might have settled the contention with a breath, has shown no disposition to do so, and W. J. Morgan, whom the Floridans placed on the toboggan this year and who seems to have hypnotized Dewar, has all to say, and is saying a lot before he reaches the end of his downward slide. He provided for a commission to control the trophy, and the commission is made up of himself and his cronies, to whom the entry fees will go for future disposition. The A. A. A., as the ruler of racing, rightly considers that its rules should apply, but out of a desire to be courteous to the titled donor, a compromise has been effected, and two A. A. A. officials will be substituted on the commission for two of Morgan's intimates.

Daytona, too, has been urging its claims to full recognition, not in the Dewar affair, but in the matter of headquarters. In previous years Ormond has had the lion's share of publicity and everything else. Ormond, as may not be generally known, consists chiefly of two hotels, run by Flagler interests. It is something of a "spite town," having been established by Henry Flagler, the railroad magnate, after Daytona had refused to bow down to him. Daytona, which is "quite a place," and has not two, but several, hotels of its own, feels that its share of the speed carnival is overdue, and has taken a firm stand—so firm that Ormond no longer will be the "whole thing." As a result, to-day's races were started from Daytona, and an agreement reached that each day hereafter the starting point will be alternated between the two towns, subject, however, to the direction of the wind, which sweeps the beach like a young gale when it blows at all. It is, of course, a vital factor for or against fast going, hence the agreement.

The new Ford racer arrived to-night. The big Darracq is also here, but has a cracked cylinder that will prevent its use.

THE SECOND DAY.

McDONALD SETS THE MILE AT 34 4-5, AND THEN ROSS TROUNCES HIM.

Daytona, Jan. 25.—"Steam has its victories no less renowned than gasolene."

If this paraphrase sounds atrocious, don't you care; it's true, and Louis S. Ross, of Newton, Mass., to-day proved its truth. In that turtle-shaped thing of his, with its stumpy smokestack pointing upward and rearward, suggesting that a devil-possessed turtle is skimming the earth hind end foremost, he to-day vomited steam all over the "gasoleners." His queer appearing craft is popularly dubbed "the Stanley steamer," but Ross himself says it is Ross's steamer. He is an engineer of no mean ability, and fashioned his car and brought it up to the concert pitch which it showed to-day.

Ross not only annexed the Clowry Cup offered for the swiftest steam vehicle, but he also gathered in the much smoked "Scotch Highball Trophy," otherwise the Dewar cup, to compete for which all comers were welcome, provided they first paid $50 for the welcome. The several fifty dollars' received from the source is to form a special fund which will be applied to the Lord and one other man knows what. All the biggest ripsnorting gasolene racers tried for the whisky man's gift, and though they "vollied and thundered," Ross's little vehicle, shod with Diamond tires and making not much more noise than the ghostly spirit it suggests, claimed it as its own. McDonald's big English Napier, and Vanderbilt's even bigger German Mercedes, Brokaw's French Renault, Heller's Belgian Pipe, Oldfield's American Green Dragon—they all contended. No automobiling nation was unrepresented. But the smallest, most insignificant creation of them all, the little American steamer, lowered their colors and showed them how to run. It won its heat in 41 3-5 seconds, and the final in 42. It won easily, too, and with open daylight between itself and the next best.

It was a great day for Ross, for steam and for America. It was a bitter gulp for the whiskey man and some others. And, oh! yes. Oldfield, in his American car, won his heat, too, and was fourth in the final. Only these two American vehicles started. And then, earlier in the day, Ross went out and proved that he was not "all out" in the "Scotch Highball" event, by skeedaddling a mile in 38 seconds. The best that even Bowden's German monster of 120 h. p. could do was 34 1-5. Ross's machine is rated but 20 horse. Bowden's record, however, stands for nothing, as his car is 300 pounds overweight.

In the record trials McDonald and his Napier did 34 4-5, which time is now the official record for the mile. The beach was not at its best to-day, and those figures may not prove of long life.

Vanderbilt, who held the old record of 39 seconds, tried again to-day, and though he drove a more powerful car than last year, he could do no better than 42 3-5. If he was disappointed, the affable young millionaire did not show it. But he at once set about changing his gears. There were those, however, who were disappointed. Nearly all the "wise ones" expected "Willie K." to sweep the decks clean. Only yesterday Bowden was among those who let fall that prediction.

To-day was notable for two close finishes, as finishes go in automobile races, and also for the appearance of E. R. Thomas, the New York banker, and B. M. Shanley, of Newark, N. J., in the role of drivers. Hitherto they have been content to let their chauffeurs take the risk, but that the Croker accident had not filled their hearts with fear, their work to-day amply demonstrated. Thomas, Vanderbilt and Shanley, representing literally a battle or flight of wealth, were in one heat of the Corinthian Cup event, and Vanderbilt won. But Thomas was al-

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most at his heels, and Shanley well up. In the first heat of the Dewar Cup race, Vanderbilt and Thomas came together again, and this time the latter turned the tables; they finished third and fourth, respectively. The heat itself was won by Ross and his little steamer, after a pretty fight with McDonald and his big Napier. The struggle was repeated in the final, for which McDonald qualified as fastest loser. He got the best of the start, but Ross overhauled him in the first quarter mile and led by an open length until within 100 yards of home. There the Englishman challenged and drew alongside, but Ross knew his machine, and, giving it a wide throttle, drew away and won by two-fifths of a second, in 42 seconds flat—a new competition record. William Wallace, who did not go to South America, was third, and Oldfield fourth. The latter, who is outclassed by the big foreign cars, qualified by winning the third heat by clever jockeying, beating out a 90 F. I. A. T., an 80 Pipe and a 90 Mercedes. In the second heat the Pope-Toledo lined up, but did not start.

In the mile time trials, Vanderbilt's record of 39 seconds was beaten three times, by McDonald, 34 4-5; Ross, 38, and Bowden, 34 1-5, but, as stated, the latter's car is overweight, and his performance does not count, nor has he been eligible for any of the events. The fact that he is a member of A. A. A. racing committee makes his lapse in this regard the more remarkable. Two other competitors got inside of 40 seconds—Wallace, 39 1-5, and Stevens, 39 2-5.

The balmy zephyrs of Florida that people read about were conspicuous by their absence to-day. Instead, a stiff wind blew that chilled the spectators to the marrow. As it blew toward Ormond, the starts were made from Daytona, instead of from the "spite town," and Daytona smiled, of course. The air was so cold that "racing in heats" became something of a joke. As a matter of fact, the warmest things on the beach were the scarlet caps worn by the officials, or, rather, they were the warmest things until several spectators lighted fires in the effort to keep themselves from freezing. The beach itself was not at its best.

The summary:

ONE MILE—TIME TRIALS.

H. L. Bowden, 120 h. p. Mercedes..... 0:34⅕
A. C. MacDonald, 90 h. p. Napier..... 0:34⅖
A. Duplus, 80 h. p. Pipe..... 0:34⅘
Louis S. Ross, 20 h. p. Ross steamer..... 0:38
William Wallace, 90 h. p. F. I. A. T..... 0:39⅕
S. B. Stevens, 90 h. p. Mercedes..... 0:39⅘
Walter Christie, 60 h. p. Christie..... 0:42⅕
E. R. Thomas, 90 h. p. Mercedes..... 0:40⅗
W. K. Vanderbilt, Jr., 90 h. p. Mercedes.... 0:42⅘
B. M. Shanley, 90 h. p. Mercedes..... 0:44⅕
Paul Sartori, 90 h. p. F. I. A. T..... 0:45⅕
M. G. Bernin, 60 h. p. Renault..... 0:45⅘
Guy Vaughn, 40 h. p. Decauville..... 0:48⅕
Webb Jay, 20 h. p. White steamer..... 0:53
J. L. Breese, 35 h. p. Mercedes..... 0:53⅗
Oscar Hedstrom, Indian motor bicycle..... 1:02
James L. Breese, 18 h. p. Mercedes..... 1:03⅕

ONE MILE—FOR DEWAR CUP.

First Heat.

Louis S. Ross, 20 h. p. Ross steamer..... 1
A. C. MacDonald, 90 h. p. Napier..... 2
E. R. Thomas, 90 h. p. Mercedes..... 3
W. K. Vanderbilt, Jr., 90 h. p. Mercedes..... 4
Time—Ross, 0:41⅗; MacDonald, 0:43⅘.

Second Heat.

William Wallace, 90 h. p. F. I. A. T..... 1
B. M. Shanley, 90 h. p. Mercedes..... 2
M. G. Bernin, 60 h. p. Renault..... 3
Time—Wallace, 0:49; Shanley, 0:54; Bernin, 1:13⅘.

Third Heat.

Barney Oldfield, 60 h. p. Peerless..... 1
Paul Sartori, 90 h. p. F. I. A. T..... 2
A. Duplus, 80 h. p. Pipe..... 3
E. B. Stevens, 90 h. p. Mercedes..... 4
Time—Oldfield, 0:49⅘.

Final Heat.

Louis Ross..... 1
A. C. MacDonald..... 2
Paul Sartori..... 3
Barney Oldfield..... 4
Time—Ross, 0:42; MacDonald, 0:42⅘; Sartori, 0:48⅕.

ONE MILE (STEAM CARS) — FOR R. C. CLOWRY TROPHY.

Louis S. Ross, 20 h. p. Ross steamer..... 1
Webb Jay, 15 h. p. White steamer..... 2
J. W. Edmonds, 8 h. p. Stanley..... 3
R. R. Kimball, 10 h. p. Stanley..... 4
Time—Ross, 0:57⅘; Jay, 0:58⅕; Edmonds, 1:64.

ONE MILE (AMATEUR)—FOR CORINTHIAN CUP.

First Heat.

W. K. Vanderbilt, Jr., 90 h. p. Mercedes..... 1
E. R. Thomas, 90 h. p. Mercedes..... 2
B. M. Shanley, 90 h. p. Mercedes..... 3
Time—Vanderbilt, 0:47⅘; Thomas, 0:47⅘; Shanley, 0:55.

Second Heat.

S. B. Stevens, 90 h. p. Mercedes..... 1
William Wallace, 90 h. p. F. I. A. T..... 2
James L. Breese, 40 h. p. Mercedes..... 3
Time—Stevens, 0:45⅘; Wallace, 0:46⅘; Breese, 0:57⅘. Final heat not finished.

TIME TRIALS.

Webb Jay, 20 h. p. White steamer..... 1:00⅘
W. E. Evans, 18 h. p. Autocar..... 1:37

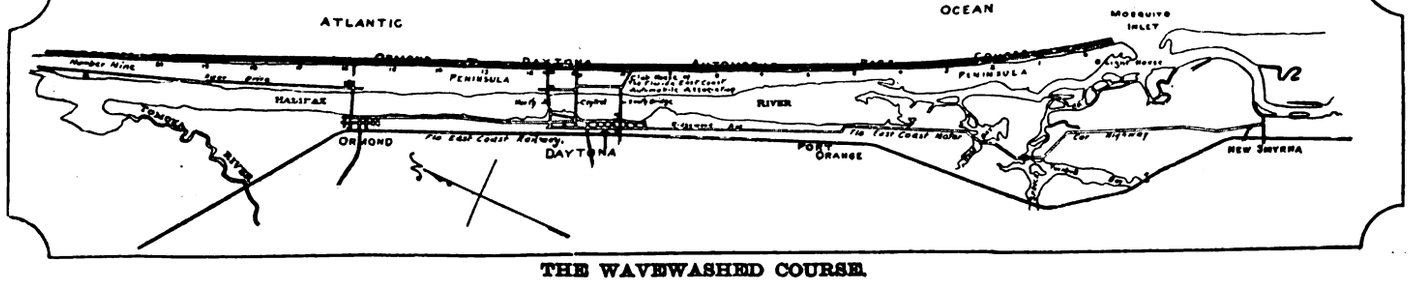
THE FATAL ACCIDENT TO CROKER.

For the first time since its institution, the Florida speed carnival was marked, or, more correctly, was preceded by an accident, and one that unfortunately cost two lives. Frank H. Croker, the well-known New York sportsman, and his chauffeur, Alexander Raoul, were the victims. The tragedy occurred on Friday last, 21st inst., while Croker, accompanied by Raoul, were indulging in a practice spin on the beach. They were moving at a terrific pace when, in an endeavor to avoid a motorcyclist directly in their path, Croker swung his car too sharply, and it overturned. The car careened into the ocean, carrying both men with it. When lifted out of the water, Raoul was found to be dead and Croker was insensible. He was immediately carried to Hotel Ormond and five doctors summoned. He was found to be so grievously hurt and the shock had been so great that, though he regained consciousness, the physicians, while hoping for the best, were fearful that the young man's wounds were mortal. His injuries were found to be a compound fracture of the left forearm, the bone protruding through the flesh; right thigh broken near the knee and a little above it; serious injury to left elbow; three ribs fractured; right thumb fractured; right ear lacerated; scalp scraped; numerous abrasions about the face and body and internal injuries, all intensified by the great shock.

Croker lingered until 6:20 Saturday morning, when death came to his relief. His body, with that of Raoul, was forwarded to New York. It reached here on Wednesday, where it awaits the arrival of his father, Richard Croker, the former leader of Tammany Hall, from Ireland, where he now resides.

The best accounts of the accident make it appear that Newton F. Stanley, the motorcyclist concerned, altered his course to escape a wave that washed in on the beach, seeing which Croker swerved to avoid him. At the same instant the car struck a spot of soft sand, which ripped off a tire, and the tragedy followed in a twinkling. The Motor World's representative on the spot, after inspecting the wrecked Simplex and talking with several expert motorists, wires that the blame does not rest on the tires. He says that the axles appear to have been too weak, the rear one having buckled when the car made its violent swerve. One sad circumstance of the accident was that, despite Croker's sacrifice, the motorcyclist did not entirely escape. He was knocked down, and sustained a compound fracture of the leg.

Frank Croker was 25 years of age and a fine specimen of young manhood. Big, broad-shouldered, robust, smooth shaven, in the sweater which he usually wore when speeding, he looked the college football player who radiates health and good humor. He was every inch a sportsman. At Brown University, where he entered with the class of '01, he played on both the baseball and football teams. Leaving college, he became interested in dogs and horses; he owned several high-bred bulldogs. He took up both automobiling and motor boating, being the owner of the X, P, D, N, C, Y, one of the fastest boats in these waters. He had it with him in Florida, where he intended to engage in the motorboat races that occur next week. As an automobilist he last year set up a string of records on the Empire City track, and also competed in the Vanderbilt cup race. On the latter occasion he flirted with fate by driving a car that literally had been riddled with holes in order to bring it inside the weight limit. The car in which he went to death was similarly riddled.



THE WAVEWASHED COURSE.

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UNDER THE WALDORF PINES

A. C. A. Banquet a Superb Spectacle and Flow of Eloquence—Even Birds Caroled There.

Each succeeding banquet of the Automobile Club of America proves more magnificently impressive than its immediate predecessor. They have really taken high place in the functions of the year. The six of the line (which several papers had confused with the annual dinner of the American Automobile Association the week previous), which, as usual, was held in the ballroom of the Waldorf-Astoria on Saturday last, 21st inst., was almost beyond comparison. It was a sight to be remembered.

The grand ballroom had been converted into a clearing in a pine forest. The tables were laid literally in a grove of evergreen. Walls, pillars and galleries were hidden by overhanging pines and hemlocks. A rockery, laden with moss and ferns, occupied the centre of the big room; palms were utilized in every conceivable manner. Small evergreen trees adorned the boxes filled with handsome women, and flowers and berries of bright hue completed the inviting and beautiful picture. Even the tables were not neglected in the decorative scheme, and never has the setting of a banquet been more effectively carried out with results so unique and startling. The speakers table was arrow-shaped and pointing away from the guest tables, a unique arrangement.

The feast began at 7:30 o'clock, following a reception, after which the guests were escorted to the ballroom through a hall that had been prepared for the woodland scene, the beauty of which excited an outburst of enthusiasm. On one side of President Dave Hennen Morris sat Lieutenant Governor Bruce, and on the other ex-President W. E. Scarritt. One feature of the banquet was the serving of ices packed in miniature motor cars.

At the guests table, besides President and Toastmaster David H. Morris, were: General George Moore Smith, Commodore Frederick G. Bourne, Thomas A. Edison, James P. Dill, Creswell MacLaughlin, Hon. Henry A. Van Alstyne, William C. Gotshall, Attorney General Julius Mayer, Hon. M. Linn Bruce, Winthrop E. Scarritt, Colgate Hoyt, Colonel John Jacob Astor, Jefferson Seligman, Park Commissioner John J. Pallas, Samuel Walter Taylor, William Phelps Eno, William H. Page, Jr., John Brisben Walker and John Farson.

Other leading motor enthusiasts in evidence were ex-President A. R. Shattuck, who had a table of guests; Augustus Post, R. Lee Morrell, A. W. Church, Royal R. Sheldon, G. E. McIvesten, John Shepherd, Jr., John P. Haines, A. Lincoln Lippett, Fred C. Stevens, H. J. Everall, Lawrence Abrams, Chauncey P. Anderson, A. L. Barber, M. Toscan Bennett, H. B. Vreeland, C. L. Edey, Frederick Glassup.

Men prominent in the industry were numerous. Among them were Windsor T. White, S. T. Davis, Jr., A. L. Riker, H. B. Joy, W. D. Gash, James Couzens, George H. Day, H. F. Cuntz, A. H. Overman, Paul Deming, Carl H. Page, L. P. Mooers, J. J. Amory, Charles L. Seabury, Alden Sampson, 2d, J. H. McAlaman, Frank Eveland, J. D. Anderson, H. W. Chapin, Charles E. Miller, J. J. Mandery.

In his address of welcome President Morris told of the growth of the club and of the automobile's development in the last few years. In contrast to the banquet of Saturday night, he reminded the diners of the first feast of the club, which was held at the Waldorf in 1899 and at which only a handful of men who "owned or intended to own" automobiles appeared.

Continuing, he said:

"Now glance at our club itself. Our membership limit has been twice reached, and now the waiting list is long—a list comprising some of the greatest names in America. Look at our membership, the most democratic of any in this country—beside the millionaire is the artisan, the only qualification being that of gentleman in its best sense. Within the fortnight we have voted to build a half-million-dollar clubhouse and garage, where we may accommodate the thousand members we soon shall have on our rolls, and through which we can curb and control the professional chauffeur."

Mr. Morris then introduced ex-President Winthrop E. Scarritt, "one of the noblest Romans of them all," whose readiness of speech has made him in great demand on all occasions. At its banquet each year the A. C. A. introduces some startling sideplay. Probably because it was suspected that Scarritt had searched the skies or the Bible for his rhetorical flight, this year's innovation was introduced as he arose to speak. It was in keeping with the woodland setting. Birds were unloosed and perched in the trees; their warblings seemed to say "Cheer up! Cheer up! Cheer up!" Scarritt refused to be disconcerted, but the carolings did interfere with the speech making.

Mr. Scarritt did not disappoint expectations. He declared the automobile to be the gift of the gods to the poor earthmen, the idea of Vulcan. "The earthmen," he said, "demanded from Jove some means of 'rapid transit,' and he called a council of the gods. Mercury suggested wings, but Mars remonstrated that Olympus would be endangered, so Vulcan made the fire car.

"The automobile is both an evolution and a revolution. It is an evolution in that it has been evolved out of the necessities of modern life. It is a revolution in that it is a revolt against the slow, antiquated and intolerable conditions of transportation since the days of Abraham.

"It was the lamented Garfield who said that the Pilgrim fathers were opposed to hanging only when they were the people to be hanged. The average American, with good red blood in his veins, is opposed to the automobile only until he gets one himself, and then he becomes an enthusiastic advocate of this sport for kings and king of sports.

"Notwithstanding this great and solemn fact, a late Governor of the Mosquito State, with more audacity than wisdom, recommended in a recent message that no automobile be permitted in the State of New Jersey that could run over twenty miles per hour. And yet this distinguished gentleman, who loves a horse, would swell with righteous indignation if it were suggested that a law be passed to hobble a horse so that it could not do a mile in better than three minutes.

"Four years ago there was in this country one automobile to every 1,500,000 inhabitants. Two years ago there was one to every 6,500 inhabitants. To-day there is one to every 1,200 inhabitants. Give us another five years and they will be as thick in this country as mosquitoes in the Hackensack meadows."

Lieutenant Governor M. Linn Bruce was accused by the diners of playing to the galleries, where many women sat. He got more applause from that quarter than any of the other speakers when, raising his glass, he proposed this toast:

"To the ladies, the only autocrats who elect without voting, who govern without law and who decide without appeal."

Mr. Bruce admitted that he didn't own an automobile and that he had never ridden in one more than two or three times in his life. As for automobilists, he had, he said, usually seen them coming at him with goggles on, disguised, their hands upon the wheels and their feet upon the brakes, travelling at the rate of forty miles an hour. On this occasion, though, he said he was glad to meet automobilists as "equals, glass for glass and bottle for bottle."

Former Lieutenant Governor Timothy L. Woodruff has been converted to automobilism. Although he admitted that he hadn't been invited to the dinner, he came, he said, to declare the fact of his conversion. Mr. Woodruff said that he was one of the men who believed once that he would never give up the horse for the automobile, but he had, he confessed, become a victim of the craze.

"And I have," he announced, "a French chauffeur."

William H. Page told the diners that his experience with the automobile had included almost everything except owning one and being run down by one. He then let fall the suggestion of a national licensing law as a way out of the turmoil of State numbers and State legislation. William P. Eno spoke at length of "Street Traffic Regulation," and State Engineer H. A. Van Alstyne, of good roads, while Samuel Walter Taylor declared that most of the members of the Automobile Club were lovers of horses, and that, instead of relegating the horse to the tomb, the automobile was bringing emancipation to him. It was to the horse what labor saving machinery was to man, he said, and he prophesied a future "brotherhood of man and horse" similar to what he imagined must have existed in the case of the Arab and the Indian of the plains.

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ALCOHOL AS MOTOR FUEL

Tremendous Strides Made in Germany—How it Compares with "Standard Oil's" Product.

Following the lead of Germany, or probably because that country has solved the problem of producing an efficient fuel for the internal combustion engine at home so satisfactorily within recent years, the question of doing likewise is now up for discussion in England.

Germany imports vast quantities of petroleum in its crude state, as well as its many products of refinement, but, realizing that in case of war this supply would be in danger of being entirely cut off, the war and naval departments counselled encouraging the manufacture of a substitute. This has been found in alcohol, for which the tremendous crops of potatoes grown on the sandy plains of the eastern and northern parts of the empire furnish abundant material. The waste of the immense beet sugar factories is also used for this purpose.

An apparatus so simple as to be readily handled by every wayside farmer has been devised for the process of manufacture, and in 1901 the industry had reached proportions where its annual output was in excess of 31,000,000 gallons, a very large percentage of which was consumed for power purposes. In the following year an exposition was held in Berlin, at which everything from an alcohol student lamp up to a 25 horsepower locomotive was shown in operation.

The display of alcohol automobiles in Paris a year or two previous will also be recalled, and, though the latter showed wonderful advances, far surpassing anything of the kind hitherto shown, not a great deal on the subject has been heard from that country since. The industry has been fostered in Germany by the passage of consistent legislation removing the tax on this spirit, as a result of which it sells at from 12 to 25 cents a gallon. It is denaturized by the addition of various chemical substances, in no impairing its value as a fuel or for use in the arts, but rendering it absolutely unfit for drinking purposes.

While the engine has to be designed for use with alcohol as a fuel, the latter has so many advantages to its credit as to be well deserving of consideration in this respect. One of the chief reasons why France has not pursued further inquiry along this line is owing to the fact that a large part of the product of her makers is marketed abroad, whereas alcohol fuel is only obtainable at home and in Germany. This is set forth at length in an interview with an English authority on the subject by the Autocar, a contemporary that is urging the matter in England.

Its greatest advantage lies in the fact that its specific gravity permits of its being miscible with water, so that, using air, water and fuel in varying proportions, the cost of the latter is appreciably reduced. The steam generated in the cylinder gives a more even expansion and permits of a longer stroke, indicator cards taken from some of the best types of agricultural engines in Germany and France closely resembling those of the steam engine. The heat absorbing properties also obviate the necessity of water cooling to the same extent as is necessary with gasolene. The heat efficiency of alcohol as compared with the latter is also superior and a better utilization of the heat units in the form of work is possible.

Until the vast fields of Russia are developed Europe must look to the United States for her supply of petroleum, and it is to guard against a failure of the supply in time of war or a raising of the price through the endowment of universities that Germany has put forth such strenuous efforts and accomplished so much. Within another decade the Teuton will be able to put his fingers to his nose at Rockefeller, and it will not be from the bad smell of gasolene, either, as alcohol is free from that, too. England is in the position that Germany drew herself out of, but is taking up the propaganda more from patriotic motives.

New Idea in Water Pumps.

"Amac" is the title of a new centrifugal pump recently placed on the market in England for circulating the cooling water. Its chief advantage lies in its relation to the engine by means of which, should the circulation be suspended for any cause not within the capacity of the pump to remove, the engine is brought to a stop. Many a breakdown for which the car owner has had to give up handsomely to the repair man, might be averted through such a device should it prove reliable. The dashboard pressure gauge is of course an almost universal preventive on the better class of cars in this country, but it needs in many instances, as pointed out by George Ade in his suggestions as to improvements for the "Rolling Peanut," a device which will give the driver a "smart kick in the shins" and inform in a gentle, but firm voice "to back up," for its pointer sometimes loses count of the numerals ornamenting its dial through the agony of internal pressure in its system and the man at the wheel "chauffs" on all unheeding until the engine itself backs up and lays down.

This Motor Cuts Some Ice.

From Lewiston, Pa., comes an account of a genius of that place who has just devised an attachment for automobiles to cut ice. Two years ago E. E. Spangler came to the conclusion that he needed an automobile in his business, and built a machine capable of running fifteen miles an hour. This year he entered the ice business, and, to save buying an ice cutting machine, determined to devote his home made automobile to this purpose. A circular saw attached to the rear axle answered the purpose. The Lewiston man claims that the automobile ice cutter does away with the work of many men and horses, and he is now seeking a patent.

TIRES NOT TO BLAME

Tests Designed to Demonstrate that Punctures and Detachments are of Small Effect.

Tire experiments in the shape of tests to demonstrate that the average pneumatic is not as readily punctured as it is thought to be, formed an interesting exhibit at the Crystal Palace, London, that drew many spectators. S. F. Edge set out to prove that punctures and cuts are not the most common causes of breakdowns.

A specially prepared road, on which were thickly strewn broken bottles, spikes and chisels, was employed for the test, and over this both a touring car and the racer used by Edge in the Bennett Cup competition were driven at a speed of forty to fifty miles an hour. The result was a surprise in that the touring car passed over this chevaux-de-frise a dozen times before a puncture was made, but so little effect had the accident on the car that the occupants were not aware of it until they pulled up. It was not so difficult to puncture the racing machine tires, and one of the latter was soon deflated. no attention was paid to it, however, and the car kept on as if nothing had happened.

The deflated tire was then loosened at one side, in order to permit it to leave the rim at high speed. It flew off when the car was running at full speed, and was whirled quite a distance along the road, but did not disturb the car or its occupants, and the former kept on its course without suffering any further damage.

In the light of the recent deplorable accident in Florida, the latter experiments are extremely interesting and directly in point, though they fail to shed any light on the former, owing to the radically differing conditions.

Variation of Float Feed Principle.

New carburetters are such a matter of daily recurrence as to scarcely merit passing notice. The majority go as they come, unheralded and unmourned. So much so that good points in many that might be availed of are overlooked. The Hennebutte is the name of a more or less recent arrival in France, devised by La Société Force Motrice Economique of Neuilly-Sur-Maine, and is said to be receiving considerable attention. Apart from the manner of controlling the gasolene feed by means of the float, it follows accepted lines, but in this respect an improvement worthy of note has been introduced. As compared with the usual manner of effecting this, i. e., supporting the float on the liquid, the float in the Hennebutte carburetter is scarcely ever fully upheld by the weight of the liquid it displaces, and begins to act only when its unsupported weight overcomes the pressure of a spring surrounding the stem of the intake valve. The effect of this is said to be a marked diminution in the variation of the fuel level due to vibration and jolting when under way.

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FERRY TEST CASE DECIDED

Court Says Gasolene is Freight and Rules Against Automobiles—Congressional Relief Sought.

According to the decision of Judge Adams in the United States District Court for the Southern District of New York, the gasolene carried in the tank of an automobile is "freight," and not merely the source of energy, as is popularly supposed. And while it is "not so clear" to the judicial mind that there was fire on the particular car concerned (a four cylinder Mors) when it went on and off the boat under its own power—which is reasonably clear to all who have to do with motors—the judge had ruled that it is plain that "when a motor of this class is in motion under its own power it carries a fire." As a result, he decided that the ferryboat Texas had violated the Federal law—Section 4,472 of the Revised Statutes as amended in 1901—when it transported the car in question, and sustained the libel against the boat, which is the property of the Brooklyn Ferry Co., and imposed the statutory penalty for the offence, $500.

This is the outcome of the suit instituted last fall, at the instigation of the Automobile Club of America, as a means of testing the federal law governing the transportation of automobiles on passengers boats.

The decision was handed down on Jan. 20. The opinion goes into detail, and is quite lengthy; it is averred therein that the "scientific testimony of two witnesses was taken on the trial on behalf of the government, but none on the part of the claimant, which apparently was satisfied with the government's case in such respect." The "scientific" character of the testimony in question may best be judged from the statement "there is not much difference between gas and steam machines—that in a four cylinder car moving at even a moderate speed, the time between the explosions in the respective cylinders would be very short; that the hot tube machines, steam cars, giving a steady, continuous flame, are in very successful operation," made by F. R. Hutton, professor of mechanical engineering at Columbia.

Then follows a lengthy, academic discussion as to the distinction between fire and flame, and the presence of the latter in the cylinder; likewise the danger of flames issuing from the muffler through failure to ignite in the cylinder and then being fired through a subsequent explosion in the latter, and whether surrounding objects or parts of the car itself would catch fire from this. This was part of the testimony of the same expert, who, on being recalled, stated "that there could be fire without flame; that there could be flame without glow, as the result of chemical action or union; that flame and fire are not synonymous terms; that you may very easily have a fire without a flame."

Divested of all superfluous verbiage, the contentions of the libellant (the government) constitute but two questions, which can be summed up in a few words: "First, whether gasolene as carried by the car in this case was freight, and, second, whether in the method of operation there was a fire as such, which had not been extinguished when the car went on the ferryboat and was relighted before it went ashore."

The attorney for the government during the trial said in this connection that "we have abandoned the idea of a spark being a flame," this admission following a statement by the witness, Dr. Hutton, that the electric sparks should not be described as a fire, and then the claimant contended that the language of the act, especially the use of the words "all fire, if any," and "relighted" clearly contemplate the two types of automobiles, one with a fire in the ordinary and popular sense, fed by gasolene and giving forth a continuous flame, and the other, like the one in question, having no such fire; that it is only by a stretch of language that the intermittent electric flashes can be described as a "fire" which must be extinguished before entering and not relighted until after leaving the boat; that the mere circumstance of there being an insignificant residuum of carbon in the cylinder does not make these flashes a fire." The claimant further referred the court to the history of the legislation resulting in the amendment of 1901, and furnished copies of the Congressional reports showing the obvious intent of Congress in passing the amendment, and that the difference above outlined was then taken into consideration.

Both parties to the action were agreed that the burner in the usual type of steam machine using gasolene as a fuel has a diameter of 14 to 20 inches, according to the size of the vehicle, and that the steady flames arising therefrom are from one to two and a half inches in height. And upon this admission and the reports above referred to the claimant contended that the latter was the class of automobile which it was intended to exclude from passenger steamers, and not the one using the electric spark.

The opinion goes on to state that "the contention that the word 'freight' in the act is used in the ordinary sense to indicate the cargo, or any part of it, or anything carried for pay, as this car concededly was, and it is a necessary corollary that all of the machine and everything belonging to it partook of the same character."

After an examination of the briefs and the testimony the judge concludes that "there does not seem to be any doubt that the contents of the tank which formed a part of the vehicle was freight within the meaning of the statute.' But "that the question whether there was a fire on the car when it went aboard and left the boat is not so clear. It appears from the testimony that there was no real danger to the gasolene in the tank from the sparks. But, whatever the intention of Congress may have been in this particular, it is really unimportant in the determination of the question here—that is, whether there was a violation of the law. It is apparent that the act of 1901 required the car to enter and leave the boat by some other method than the use of its own power, and it must be presumed that Congress so intended, however inconvenient it might prove, otherwise the requirement would not have been inserted. The testimony of the experts here makes it clear that when a motor of this class is in motion under its own power it carries a fire." Then, after comparing the steam and gasolene machines and stating that Congress has made no distinction between them, he goes on to say that "it is obvious, however, that neither class of machines can produce motive power without heat, which in these cases is the result of fire, the prohibited thing."

The claimant in its brief set up that a boy carrying kerosene in a bottle or in a bicycle lamp would be equally a violation and, touching on this, the opinion says: "The suggestions of counsel concerning the various possible slight infractions of the law do not bear on the question here. It is not necessary to determine now whether they would be regarded as of serious character or treated as de minimis. It is sufficient for the present to apply the law to the case under consideration."

"It will be observed that the act of 1901 leaves it optional with passenger steam vessels to carry vehicles containing the prohibited fluid so that no liability results from a refusal to transport machines of the kind in question. Decree for the libellants for $500."

A brief prepared by John C. Higdon, chairman of the legal action committee of the Federation of American Motorcyclists, and covering the same issues as applied to the motor bicycle, was filed concurrently with the brief mentioned, by courtesy of Herbert Green, of counsel for the ferry company. No reference whatever to this is made in the opinion, but, arguing by implication, the motorcyclist has somewhat the advantage of the automobile owner, for, being compelled to walk his machine on and off the boat, there is never at any time during the trip any fire in it, but his fuel supply comes under the category of "freight," regardless of its quantity, and the ferry owners may refuse to transport him on this ground should they chose to do so.

A further amendment to the act under which the case in question was brought will shortly be introduced before Congress. It is designed to obviate the effect of the above ruling in regard to the fuel in the tank being considered freight, as well as to permit cars to run on and off ferry boats under their own power without subjecting the latter to a fine. Probably no further action will be taken regarding the present case should this amendment be favorably considered.

New-Orleans is coming to the front. There are 122 automobiles registered in the city, and the owner of one of them was recently arrested for cruelty to animals. The cruelty consisted of "running over the foot of a horse and inflicting what might have been a serious injury."

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MOVING IN MASSACHUSETTS

First Gleam of Reason Appears, but the Law's Greatest Infamies Pass Unnoticed.

It is probable that the infamous Massachusetts law will be tinkered with at the present session of the State Legislature. The State Highway Commission, in which power akin to that possessed by the Czar of Russia is vested, has made recommendations to that end, but they deal solely with the matter of speed. The system of triple taxation, of espionage and of suspension or revocation of constitutional rights are not referred to, although a gleam of twentieth century enlightenment shines through the commission's recommendations, which, in substance, are as follows:

"Some of the towns accept the speed limit of the act; others fix their own limit of speed. Some of these last named towns specify four or six miles an hour as the maximum speed. Most of the towns make no apparent effort to enforce the speed law, while others are quite active in this direction. Many of the towns that attempt to enforce the speed law do the work spasmodically, during five days of the week paying no special attention to it, but insisting upon a close adherence to the law on Saturdays and Sundays. The inequality of the local speed laws and the still greater inequality of enforcing the law tend to bring the whole law into contempt."

"The commission believes that there are places and times when the speed as at present fixed is either too great or too small. There are certain narrow streets within fire districts and also certain crooked outlying roads where ten miles an hour is a dangerous rate of speed. There are other roads, straight and clear of obstruction, with no houses or cross roads, where the speed may safely be in excess of fifteen miles an hour; no general law can cover these cases; each cast should be carefully considered by itself. There are some absurdities resulting from local regulation which seem to bring discredit upon this method. Four miles an hour over a State road where there are few houses and no cross roads is neither necessary nor reasonable; the order is not enforced by the town officers and its existence is harmful. The commission believes that the power to vary the speeds should be given to some central authority, no change to be made except after a hearing. The rates of speed, when different from those indicated in the act, should be plainly displayed on signboards at each end of the road affected, and at such other points as may be needed. These signboards should be placed by the person or persons charged with fixing the speed; the cost to the State will be repaid out of the automobile license receipts. With the law amended in the manner suggested, the commission believes that it can be executed in a proper manner. If the commission is to continue to sit as a court, with power to suspend or revoke certificates of registration and licenses to operate, it recommends that it be given power to summon witnesses and administer oaths."

It would certainly cost something to placard all the roads of the State with signs fixing the rate of speed for automobiles on each stretch of highway, says the Hartford Times, in commenting on the Massachusetts recommendations. Those signs would not be visible at night, and would require constant attention if they were to be kept in view in the daytime. The main difficulty is that at present the persons who travel in automobiles are tourists, many of whom are from other States, and who do not pass more than once or twice a year over any given stretch of road. If they violate the speed law and get away without being arrested, there is no further opportunity to deal with them.

The Massachusetts commission wishes to have the law require that automobiles using the Massachusetts roads shall display only the numbers on their Massachusetts licenses, but here again there is difficulty, for licensed automobilists from other States are not, we believe, required to display any Massachusetts number or to be licensed under the laws of the State. It would be a hardship to require that no Connecticut or New ork automobile shall enter Massachusetts unless the owner has first taken out a Massachusetts license. There are now 3,772 automobiles licensed in Massachusetts. Within a very short time the number will be three times as large, while the number of automobiles from other States which will pass over Massachusetts roads some time during the year will number many thousands. There is probably only one way to perfectly control the speed of automobiles, and that is to forbid the use of the public highways to any vehicle capable of attaining a speed of over twenty miles an hour. Even this law might be difficult of enforcement. It may well be doubted whether any automobile law can prove entirely satisfactory to all the residents of any State. When nearly all physicians and business men shall adopt automobiles, as will happen before many years, it will be necessary to permit a speed of at least eighteen miles an hour on country roads, and any law which fixes a lower limit will fail of enforcement, in our opinion.

Missouri Indicts Miss Ruby.

The Supreme Court of Missouri will, in all probability, be called on to determine whether Miss Ruby Fullerton, a St. Louis chauffeuse, must suffer punishment for operating her automobile in St. Louis County in violation of an act passed by the General Assembly. An indictment was returned against her last week by the county grand jury. She filed a demurrer by her attorney, asking that the indictment be quashed on unconstitutional grounds. The attorney for the defendant maintains that the statute is clearly unconstitutional, one ground being because it is unreasonable. He declared that if enforced there could be no automobile operated in the State. The title of the act, he contended, was misleading in stating it was an act "regulating" the use of automobiles; that it was an act actually prohibiting their use.

TWO MORE INDIANA MEASURES

But These New Comers are of Enlightened Order—One Provides Signal Code.

Two more bills have been added to the avalanche of automobile legislation that has struck the State of Indiana. Senator Benx, of Spencer, Perry and Crawford counties, and Assemblyman Jesse E. Wilson, of Jasper County, are the authors of the two new measures.

Senator's Benz's bill is not, however, of the motorphobe order. It provides for the erection of guide posts, "substantially built and firmly placed," at the intersection of all crossroads, and wherever the road forks. The bill also requires that the distance to the next village, town or city shall be painted on it in brilliant letters, and the direction noted by a spear or hand in the proper direction. Senator Benz proposes to make the upholders of the law as liable to arrest as the automobilists.

"For each violation of the law the road supervisor of the district, who is to have the erection and mainaenance of these posts under his charge, is to be fined from $3 to $10."

Senator Benz's bill is the embodiment of ideas sugested by the various Indiana automobile clubs. This leaves it "up to the chaffeur" of the machine to determine whether or not he is going to fast for the public safety. The posts are to act as a warning, and the observance of the law rests upon the honor of the motorist, as with the distances plainly placarded to govern his speed accordingly.

Representative Wilson's bill is also within reason, and is in some respects novel, that every chauffeur shall be examined by a board of automobile control to be appointed in each county by the judge of the Circuit Court, and shall prove that he is acquainted with the machinery of the automobile. A leading feature of the bill, too, is the code of signals for which it provides. When passing an automobile, if the driver of a horse shall hold up one arm above his head it is the signal for the chauffeur to come ahead. One hand extended out horizontally by the driver of a horse shall mean that the automobile shall slow up, and extended horizontally and swung vigorously up and down shall bring the automobile to a full stop.

"These signals are in use up in our country," said Mr. Wilson, "and they have been found to work admirably. Every chauffeur and farmer in the county knows them and complies with them.

"I do not believe in restricting the speed of "autos" in the country districts. That is what they are for, and when you limit them, all kinds of trouble will result, and there will be no end of law suits. I have prepared my bill with especial reference for the future because the 'auto' has come to stay."

Assemblyman Wilson's bill limits the speed of automobiles only in congested districts, the limit being twelve miles per hour.

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WOULD REQUIRE $3000 BONDS

Tennessee Senator Offers a Substitute Bill About as Bad as his Original One.

Senator J. R. Jetton, of Rutherford County, Tennessee, evidently is a genius as regards his comprehensive knowledge of automobiles and how they and their owners should be governed. He has withdrawn his original "auto" bill and introduced a substitute, and the substitute is as much a masterpiece of idiosyncracies as the first one, which provided that automobiles should not be used in the State elsewhere than in towns of 9,000 population. This bill was an anachronism which could hardly be favored by the Legislature of a State that claims to be fairly progressive, and Senator Jetton, realizing the uter futility of having such an idiotic measure passed, withdrew it, but immediately introduced in its place one in which the nonsense is as stupid as the ignorance in the other was dense.

Not to be denied, however, the learned Senator has evolved an act which seeks to compel every owner of an automobile to give a bond to cover whatever damage may be wrought by the machine.

Various conjectures have arisen as to what caused the idea of an automobile law of any kind to originate in this provincial representative's cranium, as it is the opinion of Tennesseeans in general that there is hardly a sufficient number of automobiles in the State to justify even a speed law, and it is thought that Senator Jetton's erstwhile attempt to become a shining light in Tennessee's history, and incidentally to effect the expulsion of automobiles from the State, will be promptly repudiated by the General Assembly.

The full text of the new bill is as follows:

"An act requiring owners of automobiles, locomobiles, motorcycles and other vehicles, or machines of like character, to execute bond for damages arising from injuries caused by the running or operation thereof; to register and number such vehicles, or machines; and to provide a penalty for the violation of the provisions of this act.

"Section 1. Be it enacted by the General Assembly of the State of Tennessee, That before any owner or owners of any automobile, locomobile, motorcycle or and other vehicle, or machine of like character, operated by steam, gasolene or electricity, other than street railway cars, and run by such owner, or owners, or by his or their chauffeur, agent, servant, employe or any other person using the same by loan, hire or otherwise, and employed in the transportation of persons for pleasure or otherwise, and run upon any street, roadway, turnpike or other public highway or thoroughfare in this State, shall be required to execute and file with the Clerk of the County Court, in the county in which such owner, or owners, may reside, a good and sufficient bond, with two or more solvent sureties, in the sum of three thousand ($3,000) dollars, payable to the State of Tennessee and conditioned for the payment and satisfaction of any and all damages which may result, or arise, from injuries caused by the running or operation thereof; provided, that the amount fixed in said bond shall not preclude the recovery of any other, or greater, amount against the owner, or owners, of such vehicle, or machine, by the party injured, or aggrieved, before any tribunal having jurisdiction of the cause.

"Sec. 2. Be it further enacted, That, upon the execution of said bond, as provided for in section 1 of this act, it shall be the duty of said clerk to issue to such owner or owners a certificate of registration showing his or their name and residence, a full and particular description of said vehicle, or machine, and the number assigned to said vehicle, or machine, by said clerk in said certificate, for which he shall receive a fee of two ($2.00) dollars, to be paid by such owner or owners, and it shall be his further duty to keep a well-bound book in which a record of the issuance of said certificate shall be made.

"Certificates of registration issued under this act shall be valid so long as the ownership of such vehicle, or machine, described therein shall remain in the person or persons obtaining the same, but any change of ownership shall require the issuance of a new certificate to the person, or persons, coming into possession or acquiring ownership thereof upon the due execution of bond as required by section 1 of this act.

"Sec. 3. Be it further enacted, That a number of Arabic numerals of not less than three inches in height and two inches in width, corresponding to that assigned each vehicle, or machine, in the certificate issued by the clerk, as hereinbefore provided for, shall be displayed conspicuously at both the front and rear of said vehicle, or machine, which said number shall be plainly written, printed, stamped or otherwise set out upon a durable and substantial plate of the size of not less than four inches in width and eight inches in length, and to be provided by the owner of such vehicle, or machine, so registered.

"Sec. 4. Be it further enacted, That a failure upon the part of any person, or persons, to observe and comply with the provisions of this act shall be deemed a misdemeanor, punishable by a fine of not less than fifty nor more than two hundred and fifty dollars.

"Sec. 5. Be it further enacted, That all laws and parts of laws in conflict with this act, be, and the same are hereby, repealed.

"Sec. 6. Be it further enacted, That this act take effect from and after the first day of April, 1905, the public welfare requiring it."

The Cripple Creek, Col., city fathers are possessed of the spirit of equity, anyway in regulating the use of automobiles. At a meeting of the Board of Aldermen a resolution was passed ordering the Chief of Police to inforce the ordinance prohibiting speeding of all kinds. Horses and bicycles are mentioned in the ordinance as well as automobiles.

TEST IN FEDERAL COURT

N. A. A. M. will Strike High in License Matter Status of New York Legislation.

When the National Association of Automobile Manufacturers institutes its suit to test the constitutionality of those State laws requiring automobiles to be registered and licensed, it will not be merely the test of the law of a particular State. Realizing that any decision that might result from action of the sort would bind only the State affected, the N. A. A. M. means to go "higher up"—in fact, just as high as it is possible to go. The test will be made in the federal courts, that the judgment may be of value to all alike.

On Tuesday Charles Thaddeus Terry, the association's counsel, so informed a Motor World man. Beyond reaching this conclusion Mr. Terry has not proceeded. Meanwhile, however, he is concerning himself with the very respectable West End Improvement Association's effort to have the New York law so amended that automobilists may be jailed for a first offence without the option of a fine. In company with a committee of the N. A. A. M., composed of Albert L. Pope, George Innis and Percy Owen, Mr. Terry will endeavor to talk the matter over in a friendly manner with the committee of the West Enders and bring the gentlemen in question to a reasonable view of automobiles in general and legislation in particular.

When asked his opinion of the present status of legislation on the subject in this State Mr. Terry, of counsel for the N. A. A. M., said:

"If the Hill-Cocks bill placed on the statute books as the successor of the obnoxious Bailey bill in May last will only be allowed to stand long enough to be given a fair chance before being repealed or superseded by something drastic further legislation will be unnecessary. Conditions under this bill have been eminently satisfactory, so far as they have gone, and I have every reason to believe that it fills all requirements where reasonable people are concerned. It protects the interests that have howled loudest against the automobile, and does not unduly harass the owners of motor cars. In fact," he added optimistically, "I really believe that if this bill can only be allowed to remain undisturbed for a year or two the public generally will have come to see the error of their ways and entertain more common sense views of the subject. By that time the bill in question may be repealed and all further attempts to legislate on the question dropped for good, because the general highway laws as they now stand are sufficient. It is nothing more nor less than a repetition of the great hue and cry raised over the bicycle not so very long ago. Bicycles may now be ridden on a country road at any speed that the rider can attain, but there is absolutely no protest from the agricultural portion of the com-

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munity, and, what is more to the point, no arrests are made or prosecutions instituted whether for speeding or failure to carry lamp or bell, as was at one time rigidly insisted upon. Bicycle laws are so dead that no one thinks of their existence, and it is only a question of a few years when automobile laws will have reached the same state of innocuous desuetude."

"What are your plans should the West End Association not prove amenable to reason?" was asked.

"We shall oppose the bill by every means in our power. Mr. Brower, the moving spirit in this crusade, so-called, is little short of fanatical in his views, but I had an opportunity to talk with him at length on a very similar occasion at Albany last year, and after half an hour's conversation he was not so bitter in his sentiments as at the outset, and I trust he and his colleagues will listen to reason in the present instance. As for the farmers, they seem to think it their bounden duty to repress everything new of the kind, as witness the case of the bicycle above cited and the anti-trolley legislation. The great advantage of the statute as it now stands is that it has for the first time made speed legislation uniform throughout the State by not permitting the local authorities to have any hand in the matter, so that as long as it stands the business of adding to town revenues by means of police traps which flourished to such a notorious extent on Long Island cannot be carried on. Another good feature of the Hill-Cocks bill is that it permits the person arrested to leave his machine as bail, as in many instances he might have to spend the night in jail were it not for this privilege.

"The plans of the West End Association are at present practically the same as they were last year—that is, a bill giving every magistrate the power to imprison for the first offence in his discretion. Why, under such a law a man could be jailed for failure to carry a horn or the required number of lamps, or in many instances where the infraction would not amount to anything more than a technical violation; it is, in short, utterly unreasonable. Where the flagrant and persistent offender is concerned it will not be a difficult matter to apprehend him, and every one is agreed that nothing short of jailing will be sufficient to stop his activities, but as to imprisonment in the first instance, that is absurd."

"How about the suggested bill to make it a misdemeanor for a chauffeur to use his master's care without the latter's consent?"

"Well, there was no necessity for that," was the reply. "In ninety-nine cases out of a hundred the chauffeur observes the law whether he is driving on his own account or not, and certainly no one is harmed but the owner through having his car taken out without his knowledge."

The Spokane (Wash.) Automobile Club has elected the following officers to direct its affairs for the present year: President, F. O. Berg; vice-president C. P. Thomas; secretary and treasurer, W. S. Dulmage; assistant secretary, Harold Buckley.

Minnesota Farmers Make Protest.

The Minnesota Agricultural Society has put itself on record as favoring an amendment of the statute regulating the use of the State highways for automobiles. M. T. Grattan, who introduced the resolution, pronounced the present law the worst in existence, and a disgrace to the State.

He questioned the legality of allowing automobiles the use of the highways at all, and suggested their regulation by a law similar to that under consideration in New York. He then drew on his imagination and described the latter as making five miles an hour the legal speed in thickly settled places. He claimed the highways were for use of the majority, and not the selfish pleasure of the minority. The vote on the resolution was a shout of approval.

Michigan Ruralites Frame a Law.

Michigan farmers have induced Representative Holmes, of Gratiot, to present a bill regulating automobiles to the State Legislature. The bill, if it is passed, will oblige every owner or chauffeur to register with the Secretary of State's office and require each of them to declare what kind of a machine he is competent to run, and that each car to display a number. The speed limit is fixed at fifteen miles per hour in country districts and in cities at ten miles an hour in residential sections and six miles in business portions. It is hardly likely the Holmes bill will be passed.



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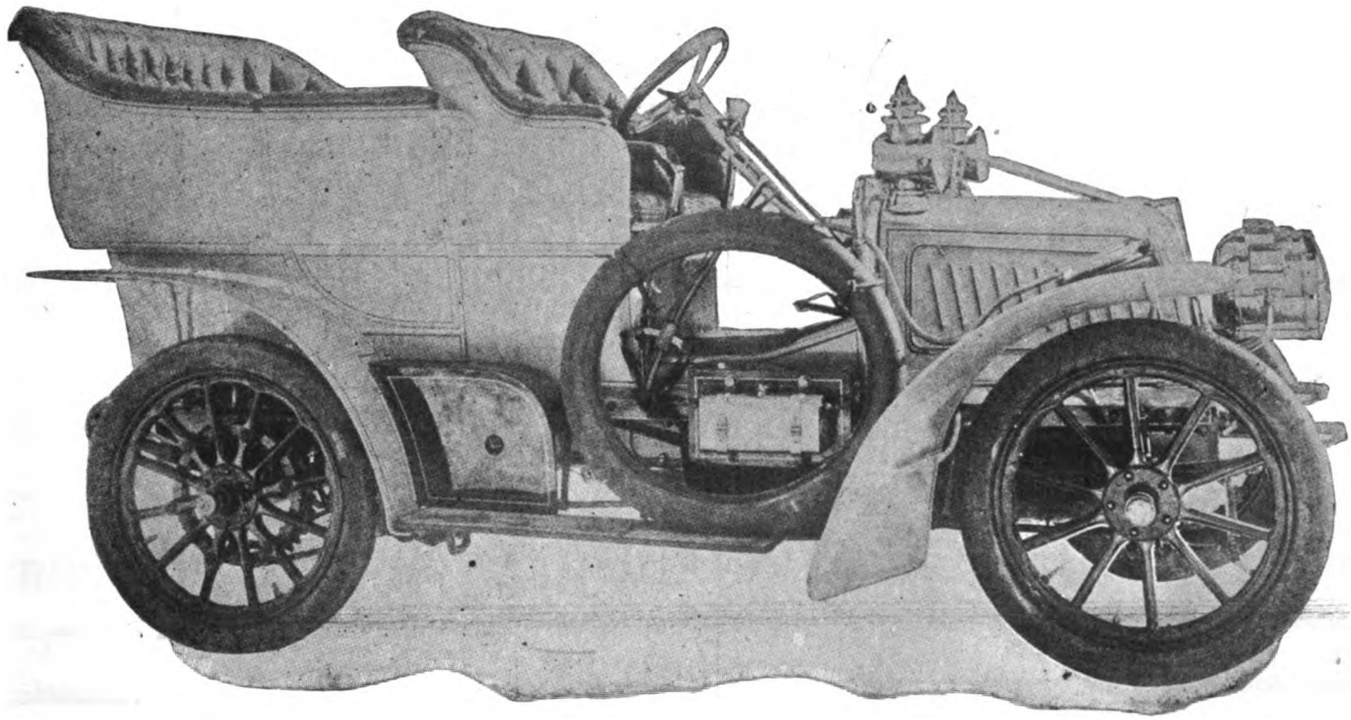
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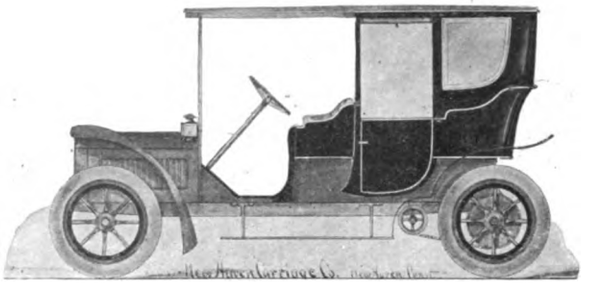
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The Week's Patents.

779,444. Pneumatic tire. Benton C. Rowell, Chicago, Ill. Filed March 15, 1904. Serial No. 198,196.

Claim—The improved tire above described, comprising an inner inflatable bladder, an outer protecting tube with a seam about its inner circumference, and an intermediate sheath of strong, tough hide, with a seam about its inner circumference, all adapted to be secured to the wheel rim and each tube to the others, substantially as described.

779,477. Automobile. Edward R. Hewitt, New York, N. Y. Filed March 23, 1904. Serial No. 199,659.

Claim—1. An automobile, comprising a running gear, an engine and front and rear body portions, the rear body portion covering the engine and being hinged so that it may be lifted up to expose the engine, and the front body portion being fixed upon the running gear, and means for securing the rear body portion in normal position.

779,490. Mixing Apparatus for Explosion or Gasolene Engines. Eddy T. McKaig, Chicago, Ill. Filed November 5, 1902. Serial No. 130,127.

Claim—1. In a mixing apparatus for an explosion engine, the combination of a mixing chamber or cavity having air and fuel inlet ports, parallel piston valves arranged side by side for controlling said ports respectively, means connecting said valves together whereby they may be moved in unison, and means for longitudinally adjusting one of said valves independently of the other, substantially as set forth.

779,578. Tire Cover. Fredson E. Bowers, New Haven, Conn. Filed September 9, 1904. Serial No. 223,858.

Claim—1. As a new article of manufacture, a fabric tire case or cover, consisting of a circular tubular case of three parts, two sides of identical ring form and a narrow crown strip having parallel edges uniting the circumferential circular edges, the inner circular edges meeting in a longitudinal seam, a lacing for said seam and buckle and strap fastenings for the meeting ends of the case.

79,581. Water Cooler. Louis H. Brinkman, West Hartford, Conn., assignor to Whitlock Coil Pipe Co., West Hartford, Conn., a corporation of Connecticut. Filed December 2, 1903. Serial No. 183,427.

Claim—1. In an apparatus of the class described, the combination with an upper and a lower water receptacle, of a water cooling section interposed between said water receptacles, said water cooling section consisting of a series of corrugated metal sheets arranged in pairs, with the longitudinal edges of each pair offset in opposite directions and soldered together and having their ends soldered to vertical side pieces forming inclosed serpentine water passages, with the uppermost communicating with the upper water receptacle and the lowermost communicating with the lower water receptacle, said corrugated sheets having flat surfaces at their ends, with the flat surfaces of the lower sheet in each pair soldered to the flat surface of the top sheet in the next adjacent pair, and openings through said flat surfaces alternately at opposite ends of the cooling section, whereby communication is established between the successive water passages.

779,588. Wheel Tire. Josiah S. Cushing, Norwood, Mass. Filed September 19, 1904. Serial No. 224,990.

Claim—1. In a wheel tire, one or more circularly formed tubular layers, comprising sheets of textile material and a plurality of helical springs connected together which are

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interposed between said sheets of textile material and attached thereto, and an outer tubular covering inclosing said layers, substantially as described.

779,589. Electric Battery. Frederic P. Dewey, Washington, D. C. Filed March 25, 1902. Renewed May 19, 1904. Serial No. 208,672.

Claim—1. An electric battery in which the cathode is in the shape of a thin flat strip and is maintained in contact with main body of the electrolyte at one edge only of said strip.

779,661. Gravity Valve. John F. McCanna, Chicago, Ill., assignor to the John F. McCanna Co., Chicago, Ill., a corporation of Illinois. Filed November 5, 1901. Serial No. 81,242.

Claim—1. In a valve for lubricating apparatus, in combination, a valve casing having a minute central induction port and an eduction port at the side of the former port, and both of which ports pass through the bottom of the casing, and a gravity valve filling the casing and having a relatively small conical point for seating in and closing the induction port.

779,702. Pneumatic Tire for Vehicles. Samuel W. Fuller, Malden, Mass. Filed June 1, 1903. Serial No. 159,583.

Claim—A pneumatic tire comprising an outer tube or casing and a series of inflated oblate spheroidal bulbs contained under pressure within the casing with their flattened ends at the inner and outer peripheries of the casing and the convexed sides of adjacent bulbs in mutual engagement throughout their lengths, the outer flattened ends of the bulbs conforming to the shape of and constituting a continuous support for the tread of the casing.

779,730. Vehicle Tire. John Neary, Kokomo, Ind., assignor to Kokomo Rubber Co., Kokomo, Ind., a corporation of Indiana. Filed May 28, 1904. Serial No. 210,252.

Claim—1. The combination with a tire body and a rim base formed by a flat annular band, of side flange members on the opposite edges of said rim base, said flange members each having an inwardly extending base portion, wedge shaped in cross section, and pointing inwardly of the rim seated on said rim base and engaging the tire on its outer inclined surface, whereby to automatically crowd the edges of the tire inwardly of the rim, substantially as described.

779,731. Vehicle Tire. John Neary. Kokomo, Ind., assignor to Kokomo Rubber Co., Kokomo, Ind., a corporation of Indiana. Filed May 28, 1904. Serial No. 210,253.

Claim—1. The combination with a tire body having a laterally projecting base portion, and a rim base formed by a flat annular band constituting a seat for said tire base, of a lateral abutment for the latter in the form of an annular angle iron having its vertical portion seated against the edge of the rim base and constituting an abutment for the outer edge of the lateral base projection, and having its horizontal portion bolted to the rim base, substantially as described.

779,778. Explosive Engine. Franklin W. Hagar, Nashville Tenn. Filed May 17, 1904. Serial No. 208,382.

Claim—1. In an explosive engine, and in combination, a cylinder, a piston movable therein, means for feeding an explosive mixture to the cylinder controlled by the strength of the vacuum suction in the latter, means for feeding a quantity of air to the cylinder for scavenging and cooling the latter, and means for varying the quantity of said air and therethrough the strength of the vacuum or suction created in the cylinder, substantially as described.

779,807. Vehicle Wheel. William H. Schofield, Chicago, Ill. Filed November 16, 1903. Renewed December 9, 1904. Serial No. 236,256.

Claim—1. In a vehicle wheel, the combination of "hairpin" spokes, spoke saddles for the bent parts of the spokes, an inner hub ring having seats therein to receive the bent portions of the spokes, and nuts arranged upon the spokes and bearing against the inner face of the felly, substantially as described.

779,928. Wheel for Vehicles. Clifford R. S. J. Halle, London, England. Filed August 8, 1904. Serial No. 219,985

Claim—1. A spring wheel composed of an axle, two sets of rigid arms carried thereby, a hub situate between the rigid arms, a flange projecting from the inner portion of said hub and having a space between it and the axle, coiled springs universally connected at one end to the flange at the other end to the rigid arms, and spokes connecting the hub with the felly, substantially as set forth.

779,929. Wheel for Vehicles. Clifford R. S. J. Halle, London, England. Filed August 8, 1904. Serial No. 219,986.

Claim—1. A spring wheel involving a hub having an inwardly extending flange, a plurality of barred links supported upon an axle box and extending through and beyond said hub, a plurality of laminated springs connecting the outer ends of said links together, a pair of laterally movable disks supported upon the axle box, a spring element interposed between said disks, and a plurality of links universally connected at one end to said flange and at the other end to said disks.

779,930. Wheel for Vehicles. Clifford R. S. J. Halle, London, England. Filed August 8, 1904. Serial No. 219,987.

Claim—1. A spring wheel involving a pair of spring arms adapted to be carried by an axle, a hub situate between the spring arms, a flange projecting from the inner portion of the hub and having a space between it and the axle, means for connecting the flange with the spring arms, and spokes connecting the hub with the felly, substantially as set forth.

780,044. Rubber Tire. Alvaro S. Krotz, Springfield, Ohio, assignor to Consolidated Rubber Tire Co., Jersey City, N. J., a corporation of New Jersey. Filed April 13, 1904. Serial No. 202,914.

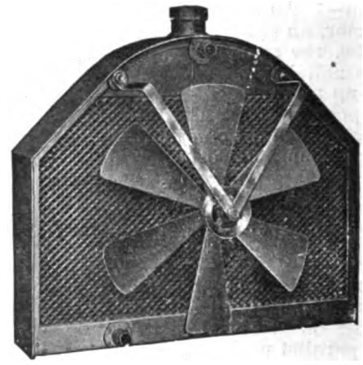
Claim—1. In a vehicle wheel, a metallic channel having one or both of its sides removable, an endless rubber tire adapted to be seated therein, said rubber tire being wider than the base of said channel, retaining bands extending through the base of said rubber tire, but adapted to stand substantially flush with the bottom thereof, and a fabric cover for the base of said tire extending between said bands and the base of the channel adapted to bind said retaining bands in position in said tire, substantially as specified.

780,051. Detachable Tire Cover. Frederick Mesinger, New York, N. Y. Filed September 9, 1904. Serial No. 223,909.

Claim—1. A tire cover, composed of a shoe, a series of transverse metal plates, a lining, flaps extending laterally from the shoe, and means for joining the free ends of the flaps, substantially as specified.

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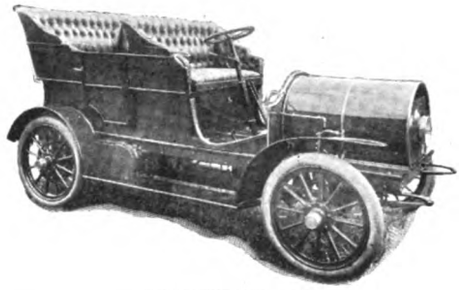
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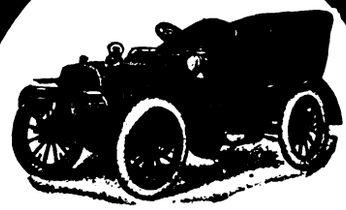
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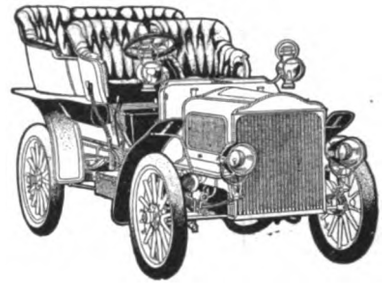
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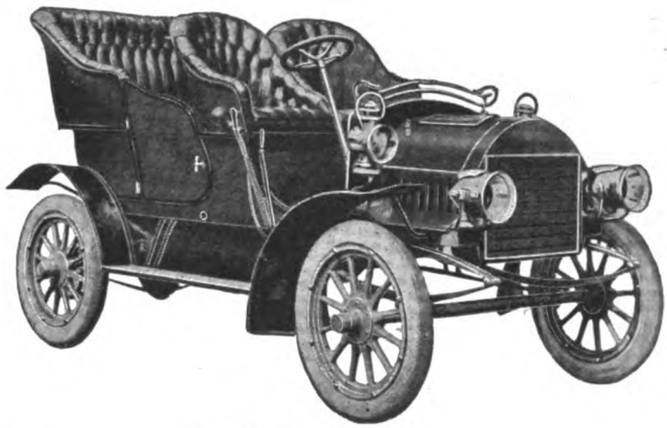
The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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THE CAR TOO GOOD FOR THE PRICE.

Easiest riding car now built at any price, owing to the Reliance spring construction. Simple pedal control. Costliest type of trouble-saving sliding-gear transmission. Wonderful hill climber.



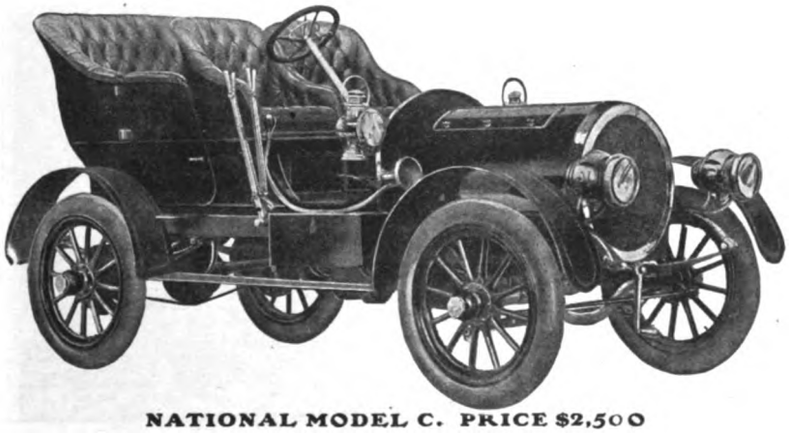
Sixteen h. p. (and lots to spare); price complete

$1,250.

Reliance DETROIT

We build it all ourselves; we KNOW it's right.
Write now for our SPECIAL terms. We have a system of guaranteeing deliveries.

RELIANCE MOTOR CAR CO., - Dept. B, Detroit, Mich., U. S. A.



NATIONAL MODEL C. PRICE $2,500

National MODEL "C"

"GOES THE ROUTE"

With NATIONALS You LEAD - - OTHERS FOLLOW

Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
Five lamps, Generator and horn.
Tires, 34 x 4. Positive oiling.
Luxuriously upholstered in leather.
Governor. Duplex throttle control.
Four cylinder 4¼ x 5 vertical.
Bevel gear drive.

Double ball bearing slide gear transmission—direct on high.
Hardened steel gears.
Gear driven commutator.
Rear wheels revolve on double ball bearings on outside axle tube.
All weight taken off inner axle and differential.
Spherical drive case.
Internal expanding metal to metal brakes.
Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905

National Motor Vehicle Co.,

1007 E. Twenty-Second St., Indianapolis, Ind.

WRITE NOW. NEW YORK SHOW SPACE. Q.



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"The Maxwell"



16 H. P. TOURING CAR
Price, for the Present, $1550

8 H. P. TOURABOUT
Price, for the Present, $700

MAXWELL POINTS

are bound to appeal to you on account of their extreme practical value to the average American automobilist.

The small number of parts in "Maxwell" constructions and the absolute simplicity of each part places these two cars in a class by themselves. If you want an automobile that is to be depended upon—one in which there is "nothing to do but ride" and which is a stranger to the repair shop, then get posted as to the "Maxwell." It is the car for ***you.***

NO PUMP. NO CHAIN. Double opposed motor in front under the hood and easily accessible in every part. Transmission case and crank shaft cast in one piece of aluminum. Noiseless, smooth and strong.

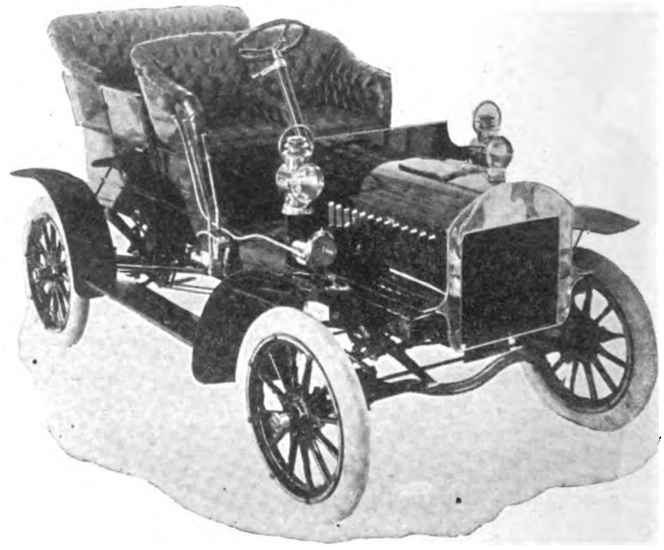
Agencies for 1905 are now being placed.

MAXWELL-BRISCOE MOTOR COMPANY, - Tarrytown, N. Y.

Packard Motor Cars
"Ask The Man who owns one"

Packard Motor Car Co.
Detroit, Mich. Member ALAM

The 1905 Logan



20 H. P. 1620 lbs.

Sliding Gear Transmission. No gears in action on high—runs in oil—impossible to strip gears when shifting.) And our **Equalized Spring Trussed Frame** (which does away with all jolt and jar of a rough road) are only **Two Features of Many** that make

The Logan "THAT CAR OF QUALITY"
Price, - - $1600

Logan Construction Company, Chillicothe, O.

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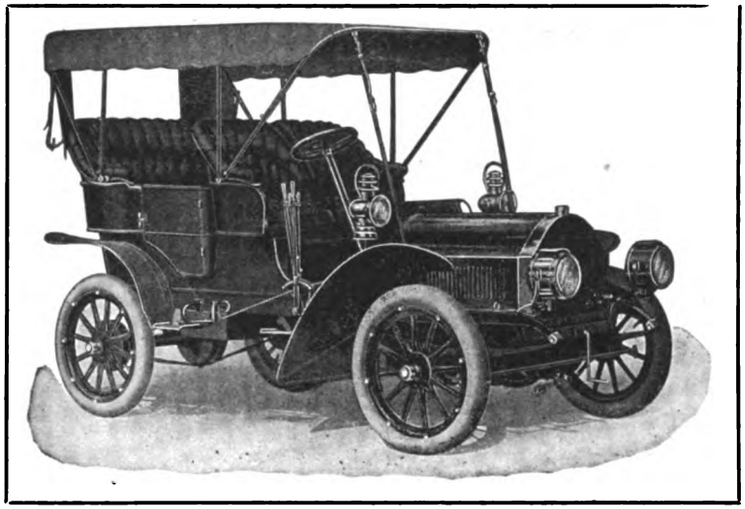
"STEVENS-DURYEA" New 20 Horsepower 4 Cylinder TOURING CAR.

MODEL R.

PLEASED PATRONS
of the popular and efficient Runabout—Model L—have showered us with unsolicited testimonials, relative to the meritorious features of the
STEVENS-DURYEA.

SATISFIED AGENTS
have ascertained that the
STEVENS-DURYEA
sells itself and stays sold.

It is logical to assume that our latest offering—Model R—will even eclipse the splendid record of our Runabout.



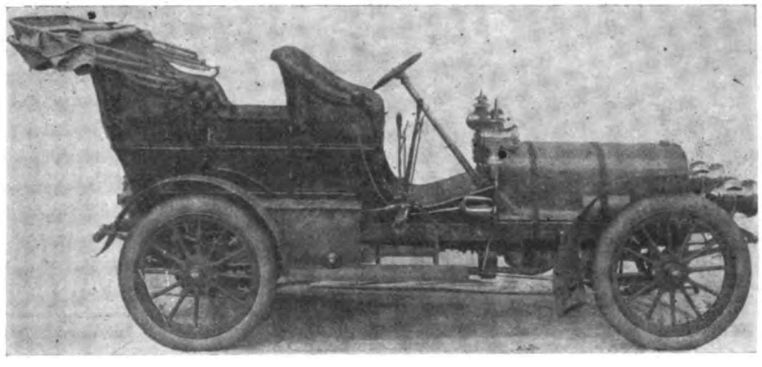
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WRITE FOR THEM
and carefully consider our attractive proposition.

Send for illustrated and descriptive matter regarding our automobile output.

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Will be Found on Stands No. 150-151.



THE FACT THAT

ACMES AT THE NEW YORK SHOW

were among the magnets that drew the crowds and caused the dealers not less than the public to open wide their eyes should add to their attractions at Chicago.

The Combination of Quality and Price is well-nigh Irresistible

ACME MOTOR CAR COMPANY, READING, PA.

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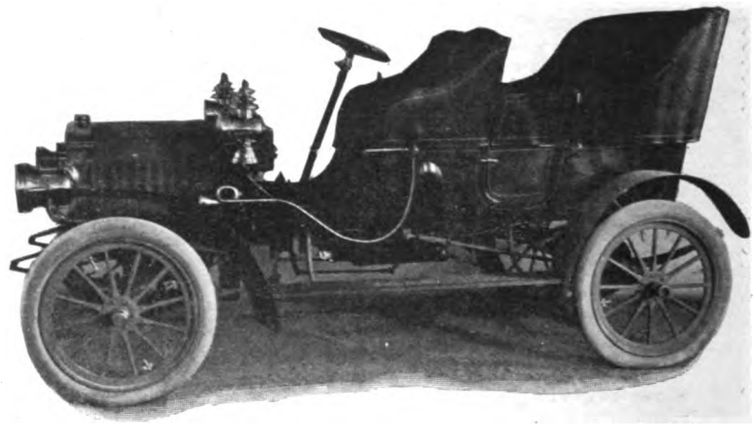
19 Years Experience

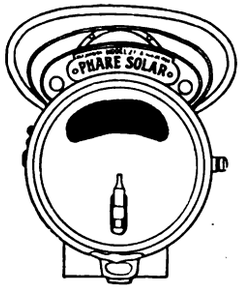
in gas engine manufacture has had a lot to do with enabling us to offer such a car as the

PIERCE-RACINE at $1250.

You will find it well worth while to become acquainted with it. We will be glad to do the introducing.

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at the St. Louis World's Fair simply confirms our repeated statement that best materials coupled with skill and care in construction have placed

SOLAR LAMPS

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See our exhibit at New York and Chicago shows if you wish to see a fine line of lamps

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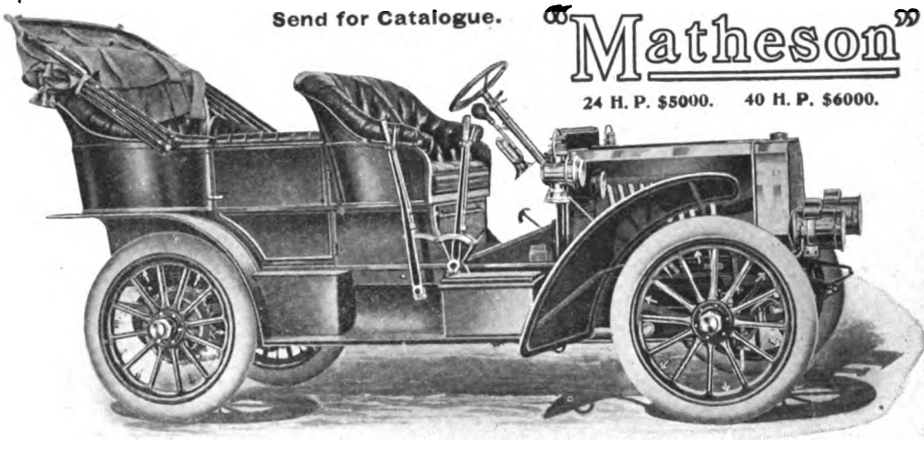
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Send for Catalogue.

"Matheson"

24 H. P. $5000. 40 H. P. $6000.



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CHARACTERISTIC FEATURES.

Self-starting from the seat.
Practically Noiseless.
Absence of Vibration.
Four-cylinder Vertical Engine.
Valves, in the head.
Automatic Carburettor, never requires adjustment.
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Imported Honey-Comb Radiator.
Long Life—insured by using greater factors of safety in every vital part than ordinarily employed.
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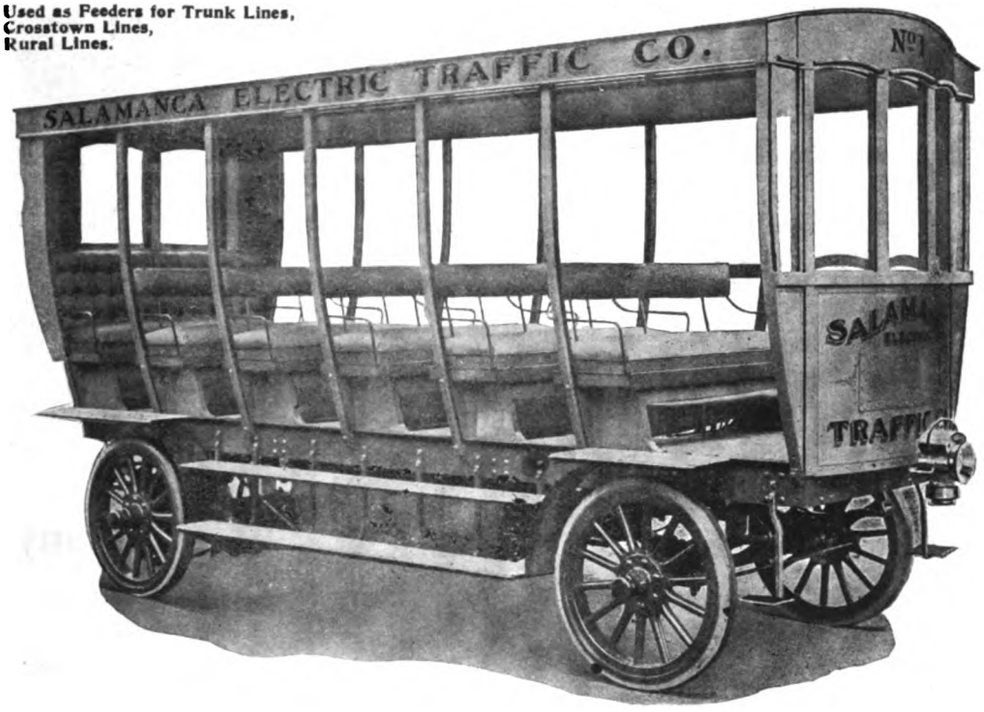
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THE AUTOMOBILE STREET CAR.

Used as Feeders for Trunk Lines,
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Rural Lines.



Built by

The Auto-Car Equipment Company,

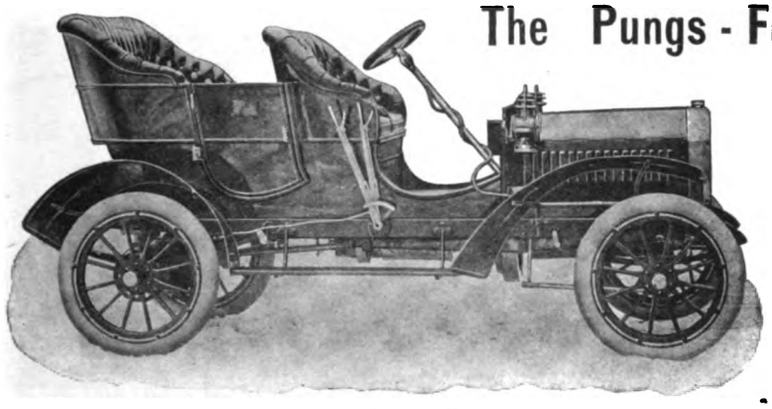
Makers of

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BUFFALO, N. Y., U. S. A.

Trucks, Delivery Wagons,
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The Pungs-Finch 4-Cylinder Touring Car



MODEL F.

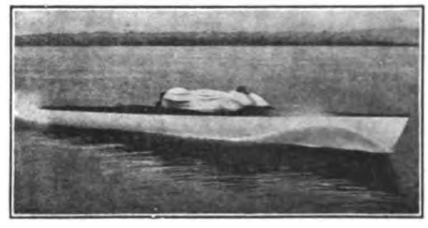
Motor—Four cylinders, 20 H. P.
Sliding Gear speed change.
Three forward speeds and reverse.
Bevel Gear transmission to divided rear axle.
Wheel Base, Model D. 80 inches.
Model F. 97 inches.
Tires, Model D. 30 x 3½.
Model F. 32 x 3½.
Weight, Model D. 1,750 lbs.
Model F. 1,825 lbs.
Side or rear entrance tonneau, seats four or five passengers.

PRICE:—

Rear Entrance Tonneau, Model D. $1,700.
Side Entrance Tonneau, Model F. $1,850.

EXPERIENCE: Fifteen years ago the Sintz Gas Engine Company built a practical and successful automobile that covered thousands of miles and was ten years in advance of the times. Constant study and years full of valuable, practical experience in the building of thousands of Gas Engines, are the secret of our ability to produce a reliable Touring Car for $1,700.
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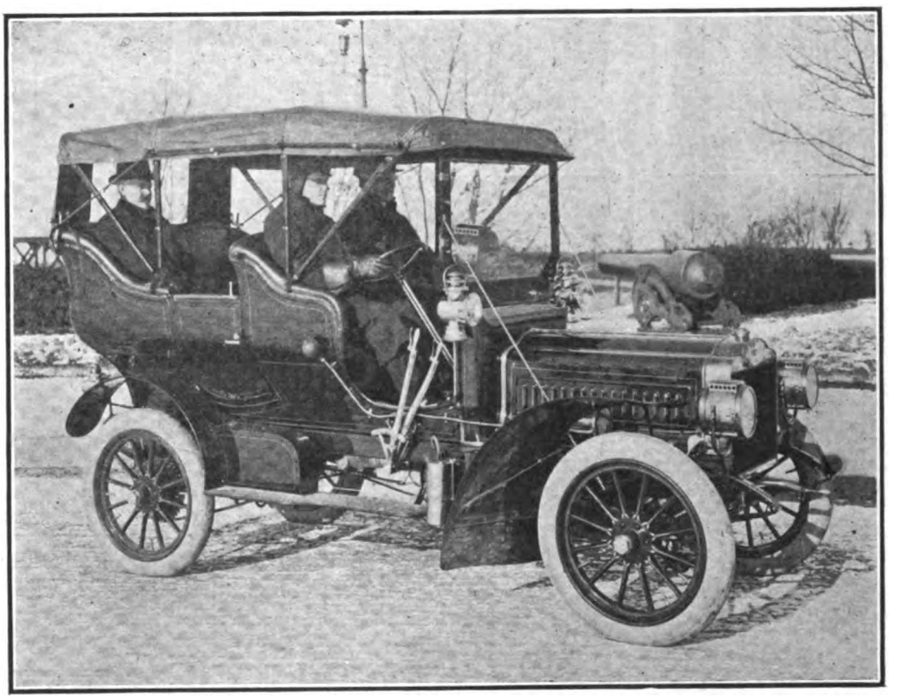
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Successors to { SINTZ GAS ENGINE CO.
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In making your transportation arrangements to attend above show consider the fine train service of the

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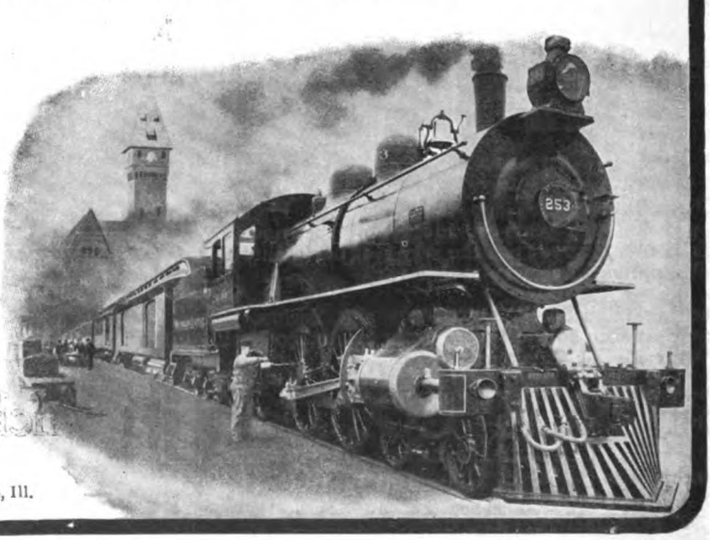
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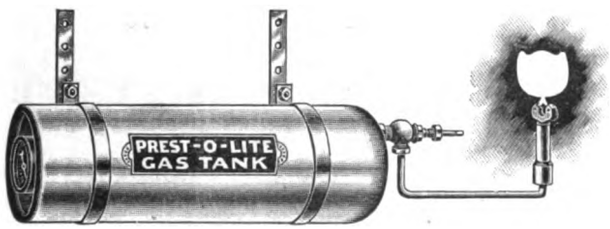
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Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

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A necessity to every individual owner.

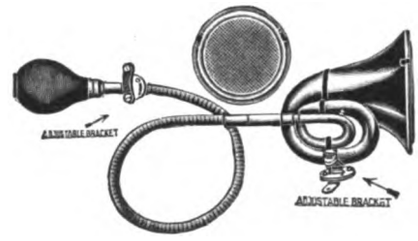
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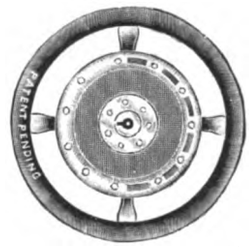
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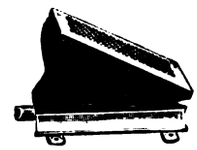
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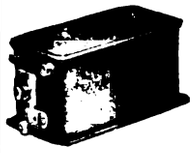
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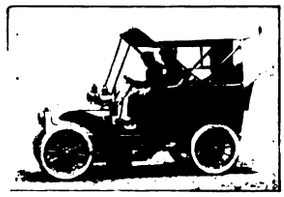
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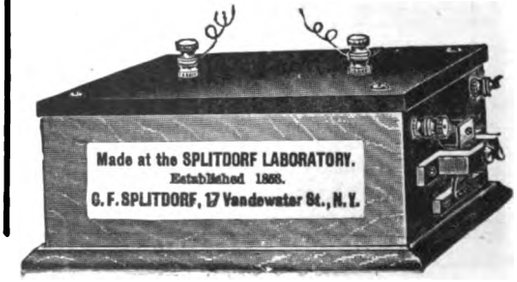
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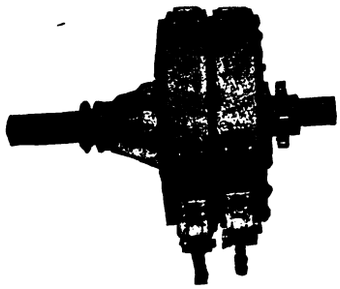
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INDIVIDUAL CLUTCH.
Two Speeds and Reverse.

OUR SPECIALTY.

SLIDE GEAR.
Direct Drive, Three Speeds and Reverse.



Transmission Gears

We have been manufacturing these gears for the large trade for three years, consequently in buying them you buy no experiments. Our prices are interesting. Write us.

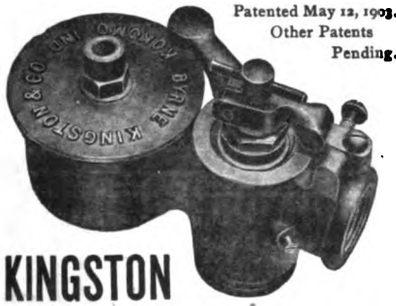
SYRACUSE GEAR CO., - Syracuse, N. Y.



Kingston Carburetor.

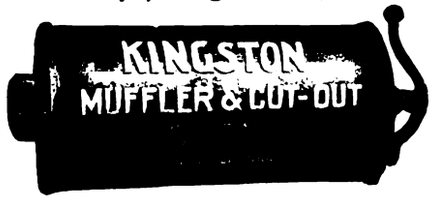
OVER 23,000 IN USE.

Patented May 12, 1903.
Other Patents Pending.



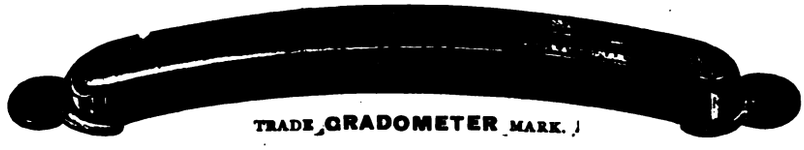
KINGSTON

Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

Pat. Jan. 20, 1901.

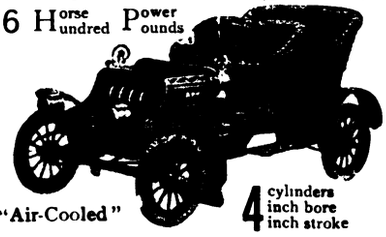


An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
THE ADAMS COMPANY, Dubuque, Iowa.

1905—The Marion Car—1905

16 Horse Power Hundred Pounds



"Air-Cooled" 4 cylinders 4 inch bore 4 inch stroke

A HIGH-GRADE TOURING CAR FOR $1,500.

Our Catalogue for the asking.

MARION MOTOR CAR CO.,
Indianapolis, Indiana.



TIRE COVERS.

Best Goods. Lowest Prices.

Write for quotations and catalogue of other Auto Supplies.

The Wm. H. Wiley & Son Co.
Box 78. Hartford, Conn.

DON'T FAIL TO VISIT THE NATIONAL
Motor Boat and Sportsman's Show
Madison Square Garden
NEW YORK CITY
FEBRUARY 21st to MARCH 9th, 1905

Why Not Avail Yourself of Our Facilities for Promptly and Correctly Handling Some of Your Special Machine Work on which You are Rushed.

DIFFICULT AND SPECIAL WORK A HOBBY OF OURS.

LET US SERVE YOU.

THE CASE MANUFACTURING CO., Columbus, Ohio.

Makers of Front Axles, Rear Axles, Transmission Gears and Special Parts.

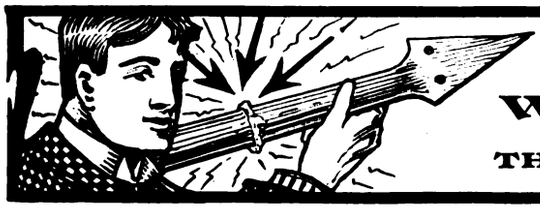
Send for Circular No. 8.

It you are going to build automobiles you will want this circular. It describes our Axles, Change Gears, Cone Clutches, Mufflers, Steering Gears and other standard parts. All of these parts have been designed with unusual care. They are suitable for cars of all classes.

FEDERAL MANUFACTURING COMPANY, Elyria, Ohio.

Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.

NEW YORK SHOW—Section "D," Concert Hall; CHICAGO SHOW—Gallery Spaces 241, 242, 243 and 244.



IT'S AWFUL EASY to weld a forging to a tube by the new up-to-date form of

WELDING BY ELECTRICITY.

See this part of a spade? It was done by us. We can do odd welding for you, too.

THE STANDARD WELDING CO., Cleveland.

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WHITNEY CHAINS

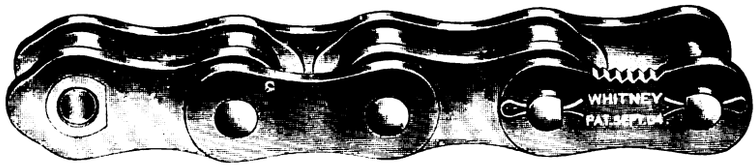
WERE

ON MOST OF

THE LEADING CARS

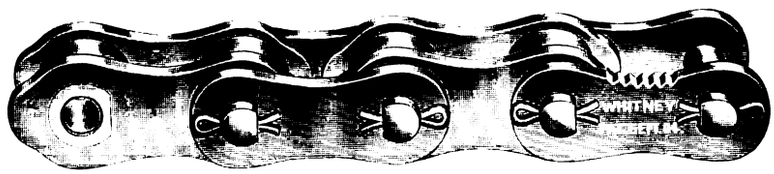
AT THE

New York Automobile Show



"WHITNEY" ROLLER CHAIN, RIVETED TYPE

All links on both sides are Riveted with exception of the one Connecting Link shown.



"WHITNEY" ROLLER CHAIN, COTTER DETACHABLE TYPE.

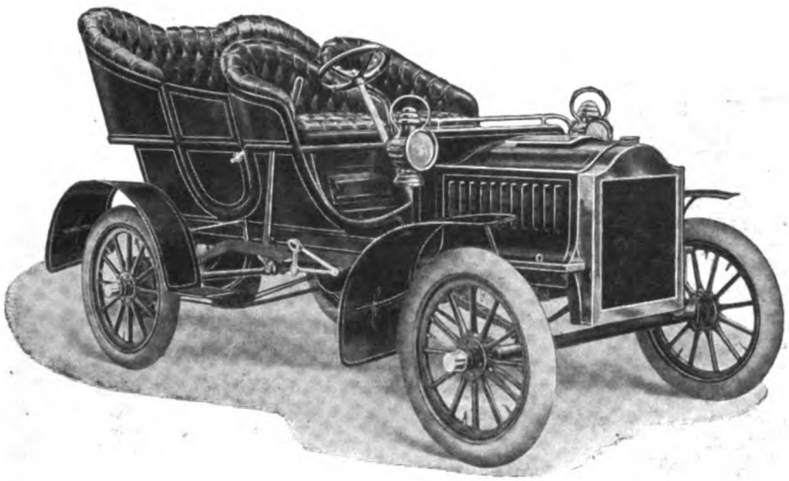
All links on one side are Riveted and all links on opposite side are Detachable. One link only is considered the Connecting Link, this being distinguished from the others by notches in the top surface.

The Whitney Mfg. Co., Hartford, Conn.

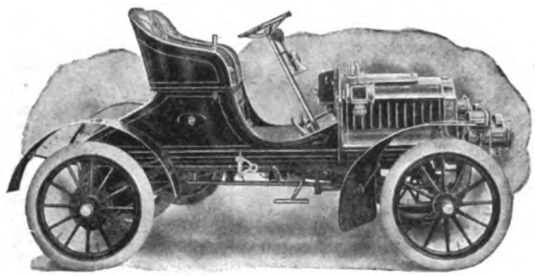


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See Six OLDSMOBILES On to Chicago



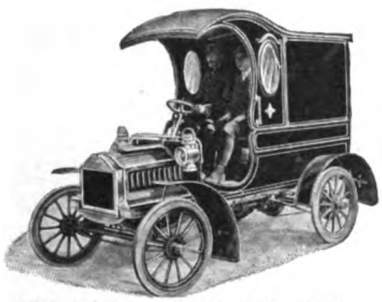
OLDSMOBILE TOURING CAR
Price $1400. 20 h. p.
(2 cylinder Side Entrance.)



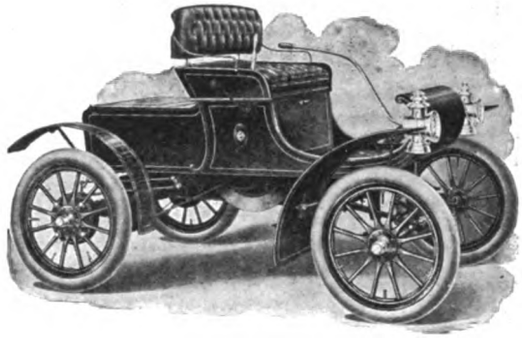
OLDSMOBILE TOURING RUNABOUT
Price $750.00.



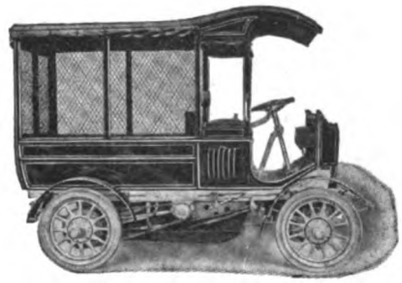
OLDSMOBILE LIGHT TONNEAU
Price $950.00.



10 H. P. DELIVERY CAR
Price $1000.00.



STANDARD RUNABOUT
Price $650.00.



HEAVY DELIVERY CAR
Price $2000.00.
(2 cylinder—16 h. p.)

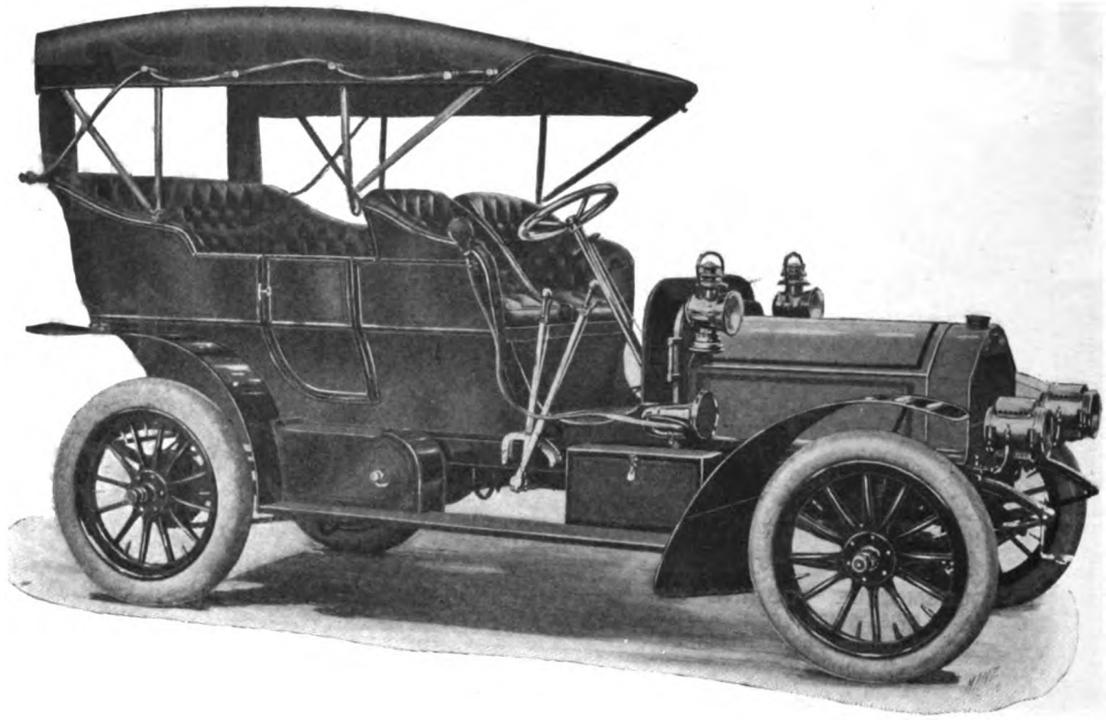
FOLLOW THE CROWD AND FIND US.

OLDS MOTOR WORKS, 1332 Jefferson Ave., DETROIT, U.S.A.

Member of the Association of Licensed Automobile Manufacturers.

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APPERSON



FORTY HORSE POWER—SEVEN PASSENGERS.

A large roomy car, for five or seven passengers. Built light and strong for **hard service** over American roads. Better material, better wokmanship, and better finish than is furnished in any **French car imported.**

We cater to a **high-class trade,** who want **only the best.** Each order with us means a special hand built car to suit the buyer. Nothing of the "Hand-me-down" type for sale.

Eleven years building High-Grade Cars. Three years building nothing but Four Cylinder Car.

Why Buy Experiments?

APPERSON BROS. AUTOMOBILE CO., Kokomo, Ind.

Branches: 394 Wabash Avenue, Chicago; 66 W. 43d Street, New York; 43 Columbus Avenue, Boston;

Member Association of Licensed Automobile Manufacturers.

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"From my experience, I would certainly recommend a Locomobile to any one considering the purchase of a touring car."—J. H. M., New Haven, Conn.

"As you know, I had in N. Y. City the celebrated —— ($6,700 foreign car), but it is not in the same class with the LOCO to my mind."—D. M. B., Amherst, Mass.

"We have had a letter from his chauffeur, saying Mr. B.—— is highly pleased with his Locomobile, it having gone 700 miles and no delays or difficulties."—J. H. M., Boston, Mass.

"I wish to say the Locomobile fulfills my expectations in every respect; it runs magnificently, does its work easily, quietly and without vibration."—A. S. P., Wichita, Kan.

"I must say the Locomobile has given me entire satisfaction in every way; the more I drive it the more I think of it."—C. L., New York.

"The Locomobile has now run about ten thousand miles, and is in as good condition as ever."—A. A. M., San Francisco, Cal.

"My Locomobile has made since the 22nd of January, 1903, 13,950 miles."—R. L. M., New York, March 31, 1904.

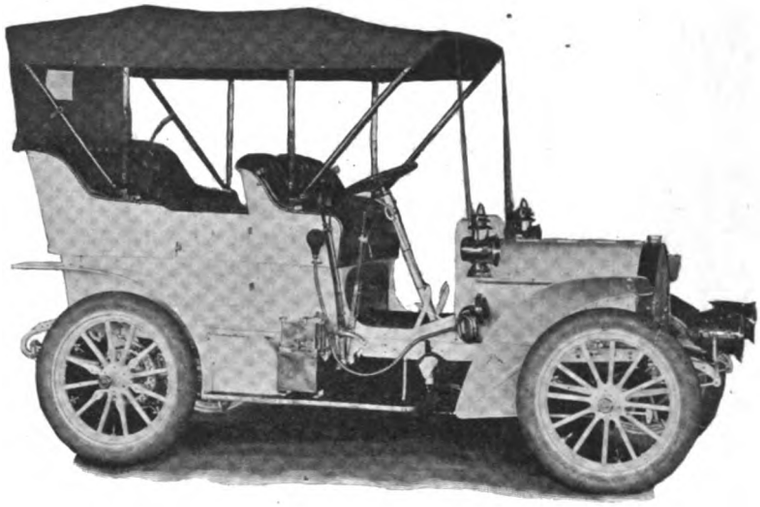
"The Locomobile is running beautifully and giving entire satisfaction."—W. A. R., Woonsocket, Mass.

"Met on this trip three parties who were running 4-cyl. Locomobiles, and they seemed to be very much pleased with them. One man, in fact, said he would not exchange his LOCO for the best foreign car built."—F. G. T., Springfield, Mass.

Locomobile

Gasolene Touring Cars.

"Easily the Best Built Car in America."



"This is the fifth automobile that I have had, but of all the cars I have seen or used, there is none that will compare with the Locomobile in any manner."—S. T. M., Lafayette, Ind.

"The Locomobile is delightful in every respect, and there has been no trouble whatsoever so far."—H. S. E., New York.

"It gives me much pleasure to say a good word for the Locomobile Gasolene Touring Car—I regard it as the most reliable and generally satisfactory of any of the twelve automobiles I have owned."—G. F. C., New York, N. Y.

"In every way the Locomobile has been entirely satisfactory; never has failed to do what was required of it. Refer any to me you care to."—A. G. M., Norwich, Conn.

"I have now run my Locomobile for about 6,000 miles, and it has never refused to come home under its own power."—F. W., Fitchburg, Mass.

"I am very much pleased with the behavior of the Locomobile, and consider it way ahead of last year's car, although that gave good satisfaction."—F. W. B., Bridgeport.

"Came up to Boston yesterday. The Locomobile went like a bird. Have been over 500 miles, and have not missed an explosion."—F. H. T., New Bedford, Mass.

"I think the Locomobile Company's claim of "Easily the Best Built Car in America" is a perfectly just one. I can readily claim it to be superior to any American and equal in the same horse power to any French car, and at the same time perfectly adapted to American roads."—J. C. S., Boston, Mass.

"I think the construction (of the Locomobile) is absolutely perfect, for never was a more rigid test given a machine than our trip from Bridgeport to Providence."—A. L. P., Providence, R. I.

"I have used it now three months in my business, which is constant. We are averaging sixty miles per day, up hill and down. The Locomobile is certainly all you have recommended."—Dr. R. W. L., Ridgefield, Conn.

"Have run the 4-cyl. Locomobile purchased from you last November about 5,000 miles. About 4,000 miles of this was through the mountains of California. I do not think any machine could give better satisfaction."—D. H. G., N. Y.

Write for full information regarding our 1905 product.

All models are of the four-cylinder type, with side entrance tonneau. Prices, $2800 to $8000.

"My Locoombile delivered to me in November, 1902, is running satisfactorily, and with the exception of such adjustments as are necessary on all cars is always in commission."—M. M. R., New York City.

"I am frank to say I am delighted with the Locomobile. Believe there is no better machine made—in fact, do not believe there is another machine in the country that would have gone where I did last Sunday."—C. B. M., Minetto, N. Y.

The *Locomobile* Company of America,

BRIDGEPORT, CONN.

NEW YORK—Broadway, corner of 76th Street
BOSTON—No. 15 Berkeley Street
PHILADELPHIA—No. 249 N. Broad Street
CHICAGO—No. 1345 Michigan Avenue

Member Association Licensed Automobile Manufacturers.

"Have run my Locomobile easily 8,000 miles. She has always gone and returned from every place I have started for without any trouble."—D. N. A., Bridgeport, Conn.

"Cannot say too much in praise of the Locomobile. Have several friends who own cars, and they say it is equal to, if not better, than the foreign cars."—C. L. H., Norwich, Conn.

"I have now operated the Locomobile for about five months. During that time I have never wanted the car when it was not ready to go out."—W. A. W., Jr., Hoosic Falls, N. Y.

"I can offer no suggestions which would be of value as to the improvement of the Locomobile. It has far surpassed my expectations."—W. B., Boston, Mass.

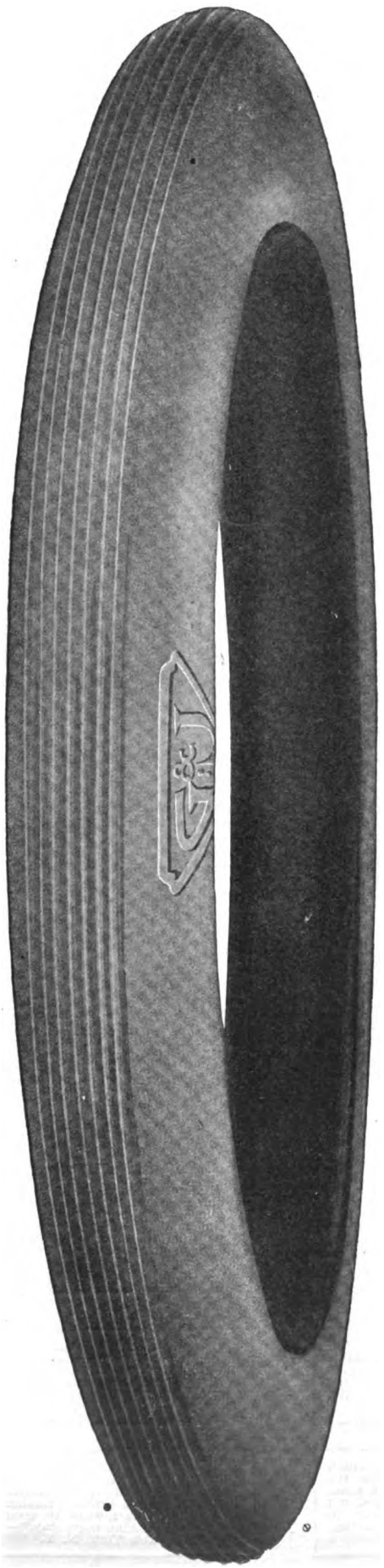
"Every time I drive the Locomobile I am more than pleased with it. Saturday evening last I drove 20 miles in 42 minutes, including three long hills, and the car ran like a watch."—F. W. M., Jr., La Salle, Ill.

"I have yet to see a car which I think is better than my Locomobile, or will stand up as well over all kinds of country roads with the ordinary usage which a car gets."—P. W. W., Boston, Mass.

"I fail to see how you could improve in any way upon the Locomobile, as its details seem perfect, and it is without doubt "easily the best built car in America."—A. L. P., Providence, R. I.

"Where my Locomobile was this summer for a month it was the only car out of two dozen, including high-priced foreign cars, that was always in good shape and running every day."—C. W. L., New York, N. Y.

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Thread Fabric

G & J TIRES

Most Durable
Fastest
Safest

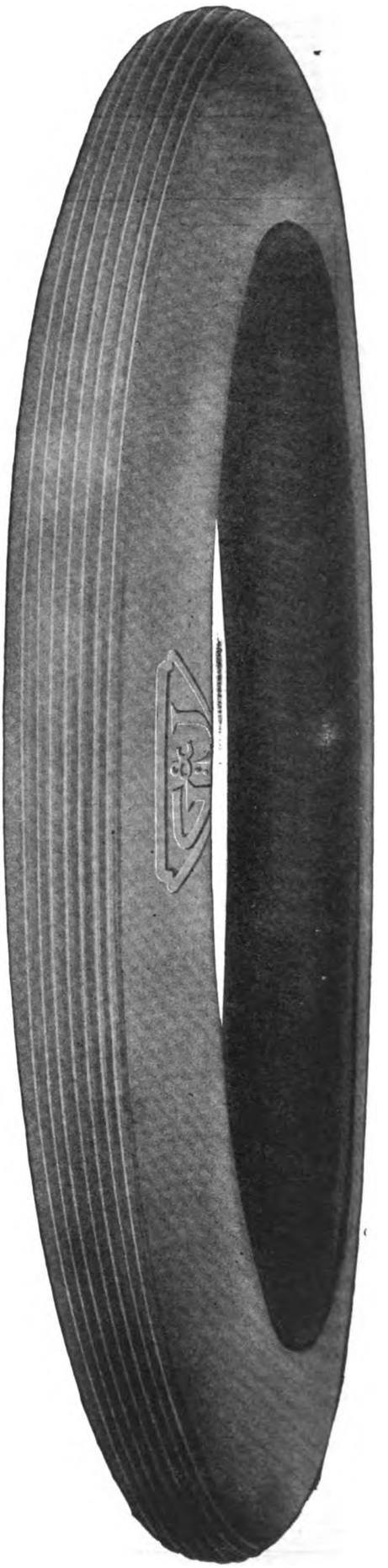
The thread fabric construction removes all internal friction from the fabric, so that the tires do not heat up under the longest drives at the highest speed. That is why G & J thread fabric tires are the most serviceable automobile tires in the world.

G & J TIRE CO.

Factory:
INDIANAPOLIS, IND.

Branches:
CHICAGO, ILL. **DETROIT, MICH.**

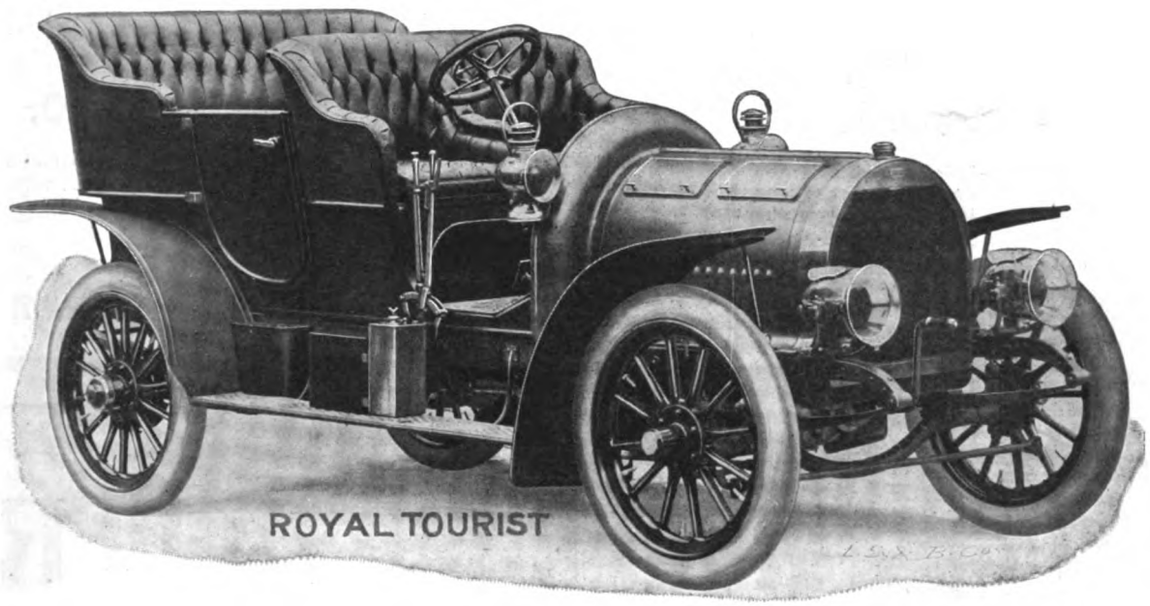
Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded.



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THE ROYAL TOURIST

"TRUE BLUE."



32-38 H.P.—GUARANTEED—2500 LBS.

$3000.00.

NO BETTER CAR AT ANY PRICE.

Automatic lubrication of motor and transmission. Direct shaft drive—free driving axle. Detachable clutch—no adjustment. Controls on top of steering wheel. Positive throttle—no mechanical governor. 4½ inch tires—full lamp equipment. Advanced design of body—hood—dash.

Don't overlook this car at the Chicago Show, Stands 33-34-35, or write Dept. L for full particulars.

THE ROYAL MOTOR CAR COMPANY, Cleveland, Ohio.

NEW ENGLAND AUTOMOBILE CO.
182 Columbus Ave., Boston, Mass.

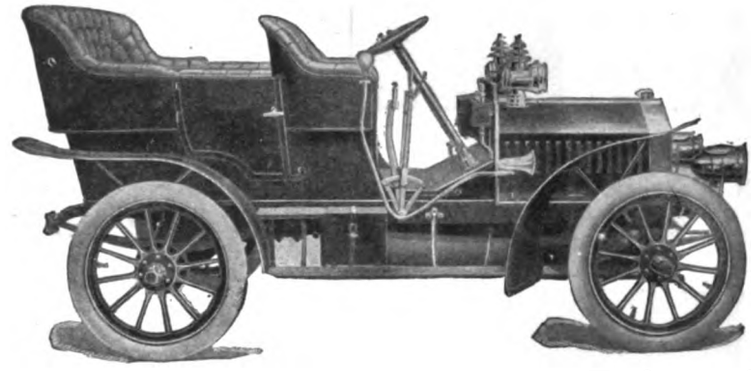
C. A. DUERR & CO., Inc.
Broadway & 58th St., New York, N. Y.

HARRY BRANSTETTER CO.
Chicago, Ills.

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THE "CLEVELAND"

A high-grade, light-weight touring car.



18 h. p. four cylinder vertical engine. **Price, $2,800.**

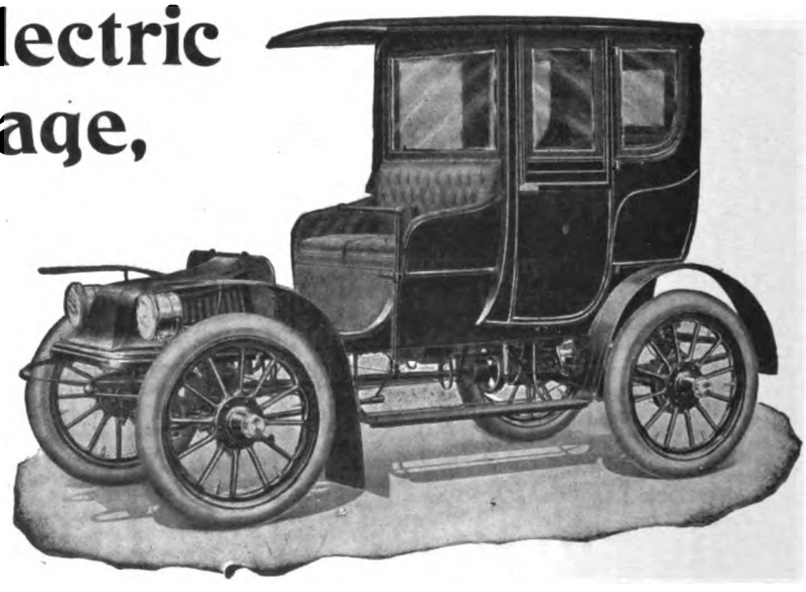
FEATURES:—91-inch wheel base; pressed steel frame; aluminum underbonnet; spark and throttle control on top of steering wheel; three-speed transmission with direct drive on high speed; mechanically actuated inlet and exhaust valves; jump-spark ignition; side door entrance.

We are establishing Agencies. Write for particulars.

CLEVELAND MOTOR CAR CO., ▪ ▪ CLEVELAND, O.

THE BAKER ELECTRIC

The Baker Electric Depot Carriage,



The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES, SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.

THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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Can you read between the lines? If you can, then you'll find "meat" on this page.

By this time probably nine-tenths of the motor-car dealers have begun to realize that there is something unusual doing in the Orient line this year.

First came our flat-footed announcement that our '05 Touring models would be a sensation.

Then we made good by showing the illustrations, and later the cars themselves.

All the time we kept dropping hints about our new advertising and selling plan (combined).

We said we would push the Orient line in 1905 as no line was ever pushed before.

We are making good on that, too—ask some of the real representative dealers who have closed with us, what they think of the plan we are starting for them. We will furnish you their names on request.

It is a plan which we will start for you if you want to handle the Orient line. We'll give you all you can do, just taking care of the people whom we send right into your garage ready to talk motor-cars. Our campaign will be direct to them, and it will have a force and vigor that will compel attention.

Do you want to know more about it?

Write.

WALTHAM MANUFACTURING CO.,

Members of Association of Licensed Automobile Manufacturers.

Factory: WALTHAM, MASS.

GENERAL SALES OFFICES 44 Broad St., New York City.

Did you notice in the daily papers that the water-cooled cars were freezing up down at Ormond?

Air Cooling Means Non-Freezing.

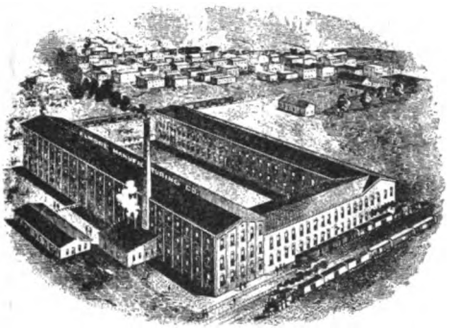
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NO PUNCTURES—NO PUMP.

No need for Removal from Rim.

JUST GOODRICH TIRES.

H. V BECKER. PRESIDENT. B A BECKER. TREASURER. J. H. BECKER. SECY & M'G'R



ELMORE MANUFACTURING CO.

Elmore Automobiles AND Launches

HYDRO-CARBON -MOTORS-

Clyde, O. Jan. 4, 1905.

The B. F. Goodrich Co.,
Akron, Ohio.

Dear Sirs:

Percy F. Megargel, W:S. Harrison, of Rochester, N. Y., and Ralph Megargel of Scranton, Pa., ran an Elmore Pathfinder,- a machine having 16 horsepower and weighing, including passengers, baggage and extras, 2150 lbs. - from New York to St. Louis and back to Philadelphia, on a single set of Goodrich tires, not only without a puncture but without having to pump up the tires during the entire trip . This trip was begun on May 18th when the roads were almost impassable, and on the return trip, when passing through Pennsylvania, the rains had washed the dirt off the roads so that it was an almost continual run over rocks and stones. The severe service through which these tires went would be more appreciated by the perusal of the little booklet which the Elmore Company have gotten out, "The Cruise of the Pathfinder," illustrating and describing this wonderful tour.

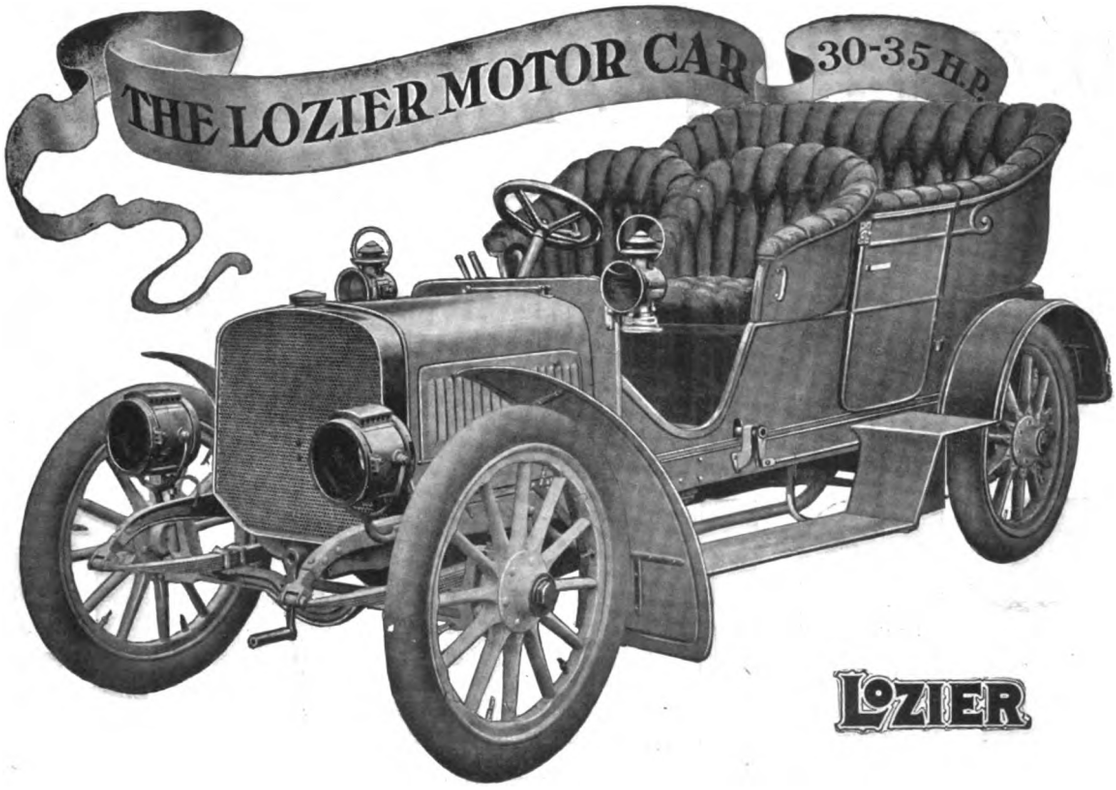
The mileage on the first set of tires figures up to a total of about 3000 miles. This same car made the trip a second time but the rear tires were changed, not because the tires had given out, but they were worn some on the sides from continual traveling through deep ruts, and as the second run was made under the auspices of the Association of Auto Mfgrs. and the cars were liable to a penalty unless a certain number of miles were made each day, it was deemed advisable to change the tires to prevent there being any possibility of delay from tire troubles, although there was no reason to believe that the original set of tires would not have been able to make the trip the second time.

Yours truly
Elmore Mfg. Co.
B A Becker Treas.

THE B. F. GOODRICH CO., Akron, Ohio.

NEW YORK, 66-68 Reade St. and 1625 Broadway.
CHICAGO, 141 Lake St.
DETROIT, 80 E. Congress St.
BOSTON, 155-161 Columbus Ave.
BUFFALO, 9 W. Huron St.
SAN FRANCISCO, 392 Mission St.
DENVER, 1444 Curtis St.
PHILADELPHIA, 909 Arch St.
CLEVELAND, 420 Superior St.
LONDON, E. C., 7 Snow Hill.

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The Largest American Car—

115½ inch Wheel Base
36 inch Wheels
Any Style Body
Seats 5 to 7
Vertical Type Motor
Absolutely Automatic Carbureter
Ignition by High-tension Magneto

STRICTLY HIGH GRADE IN EVERY PARTICULAR. SEND FOR CATALOGUE.

THE LOZIER MOTOR CO., New York City, 1 Broadway, Suite 9.

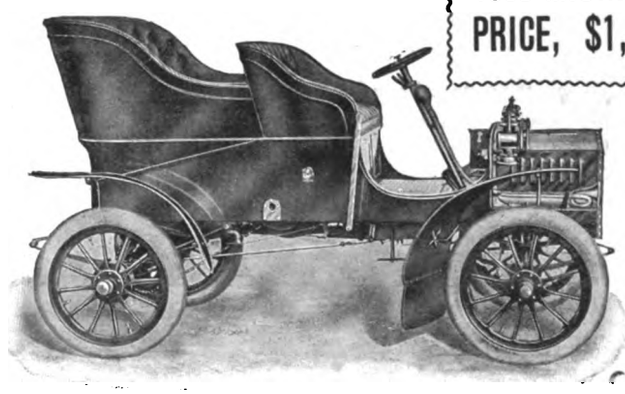
THE MICHIGAN

Two Models "D" and "E"

LIGHT TOURING CARS FOR 1905

Appropriately Named
"The Car of Power."

MODEL D
1905 MICHIGAN
PRICE, $1,100



DESCRIPTION:—These cars have our tried and tested 1904 Motors, 4 5-8 x 5 in., 14-horsepower, 2-cylinder, horizontal, opposed. Planetary transmission with two speeds forward and reverse 1 1-4 in. chain, Warner differential, Hill Precision Oiler, Schebler or Kingston carbureter, expanding rear hub brakes and brake on differential, full elliptic springs of best quality. French hood. Model D has 80 inch wheel base, 30 x 3 1-2 inch tires, removable tonneau, rear entrance. With 3 in. tires, $1,050. Model E has 86 in. wheel base, 30 x 3 1-2 in. tires Side Entrance. Price, $1,250. We shall be pleased to send you catalog or answer any question.

MADE BY

Michigan Automobile Co., Ltd.,
Kalamazoo, Michigan

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WHEN A CAR

HAS GIVEN SUCH

General Satisfaction

AS THE

CADILLAC

HAS GIVEN

The Men Who Sell It

AND

The Men Who Buy It

MAY WELL

Point to it with Pride

Are You of the Number?

"To date have ridden 3168 miles without one cent for repairs. Have ridden over all kinds of roads and mountains, etc., and have never even had a loose nut. I can pass a great many of the big machines and always go out with four people. I have climbed every hill and mountain that I have tackled.

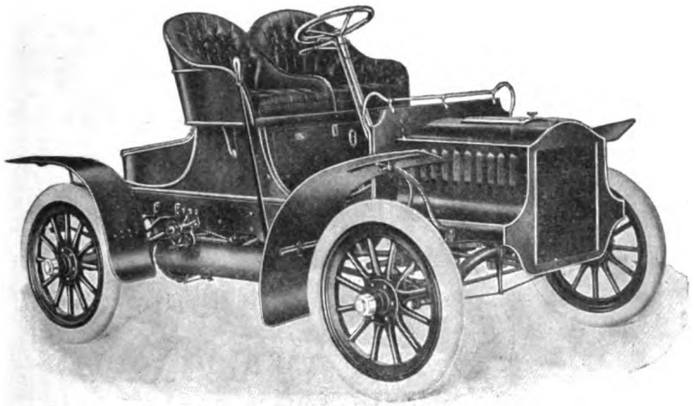
"A. H. CHAMBERLAIN, Rahway, N. J."

CADILLAC AUTOMOBILE CO.

DETROIT, MICH.

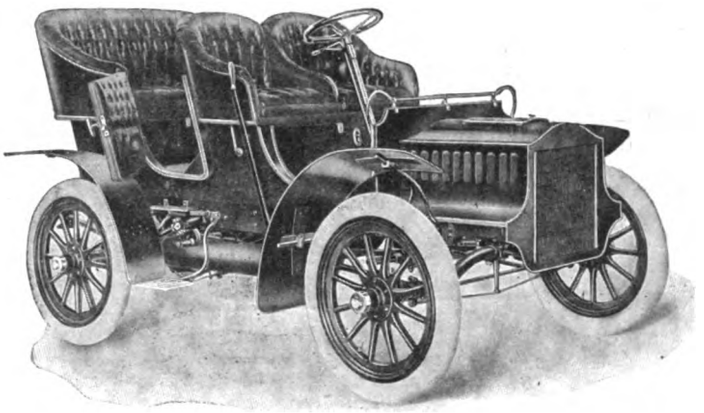
Member Association of Licensed Automobile Manufacturers.

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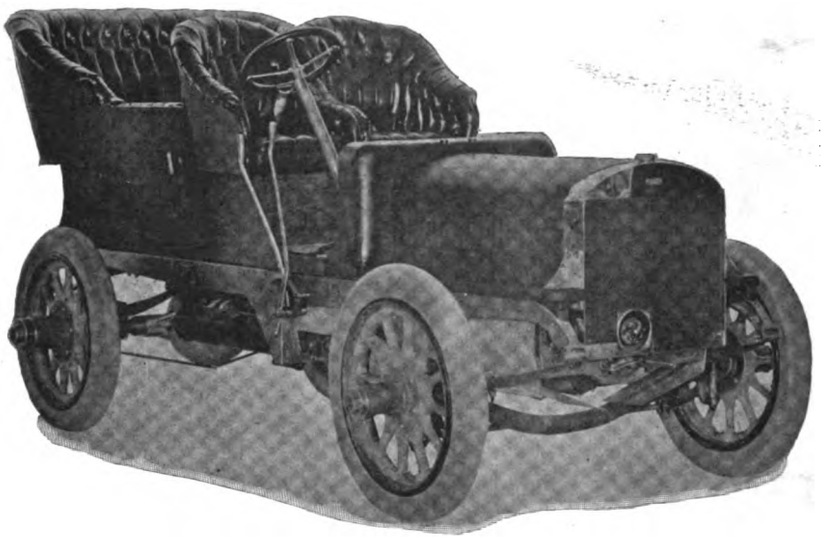
CADILLAC MODEL E, $750.

A high-powered runabout, designed for two passengers only, and can in no way be fitted with tonneau. Divided front seats. 28x3 tires. New type hood. Finish: Brewster green, primrose running gear. Option: Maroon body and running gear. Deliveries from January 15th.

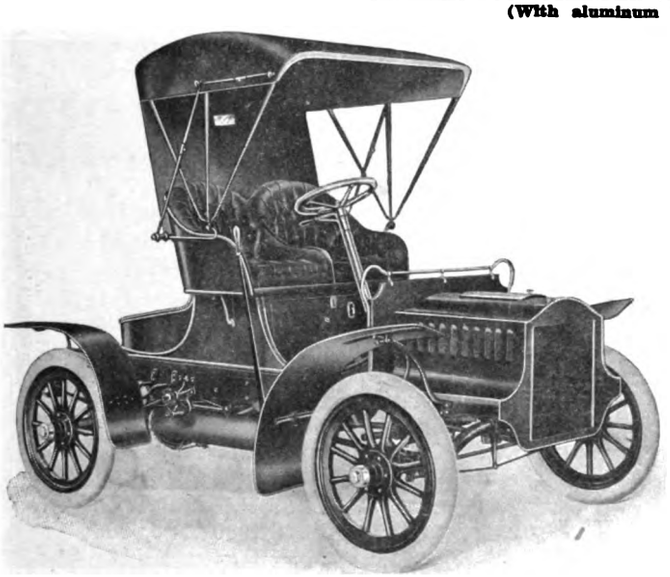


CADILLAC MODEL F, $950.

Side entrance, non-convertible touring car. Divided front seats. New type hood. 3½ inch tires. 30 inch wheels. Finish: Brewster green, primrose running gear. Option: Maroon body and running gear. Deliveries from January 15th.

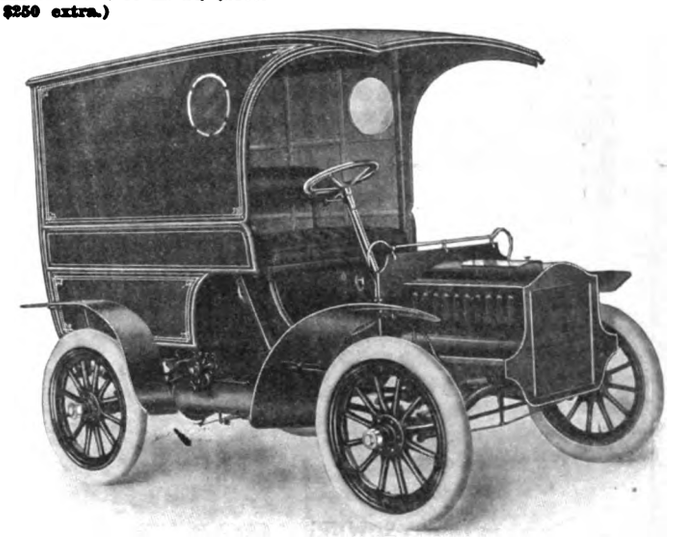


CADILLAC FOUR-CYLINDER VERTICAL MOTOR, 30 H. P., $2000.
(With aluminum body, $250 extra.)



CADILLAC MODEL E, WITH TOP, $800.

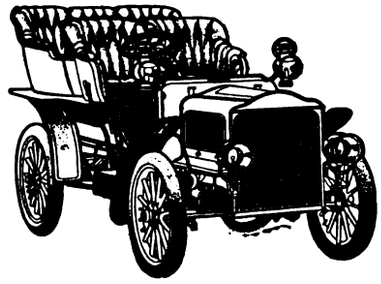
Same specifications as regular Model E. A superb two-passenger car for use in all kinds of weather.



CADILLAC DELIVERY WAGON, $950.

The Cadillac delivery wagon has been a commercial success from its very inception; used last year in many large cities, giving thoroughly satisfactory service. New model has largely increased carrying capacity. Will be a big seller. Immediate deliveries.

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PERFORMANCES

OF THE

15 H.P. WHITE

(Stripped and provided with Wind Shield),

At ORMOND, FLA.

Time Trial

1 Mile, - 53 Seconds

1 Kilometer, 32 4-5 "

Class B Races

851—1432 Lbs.

First in One Mile Race

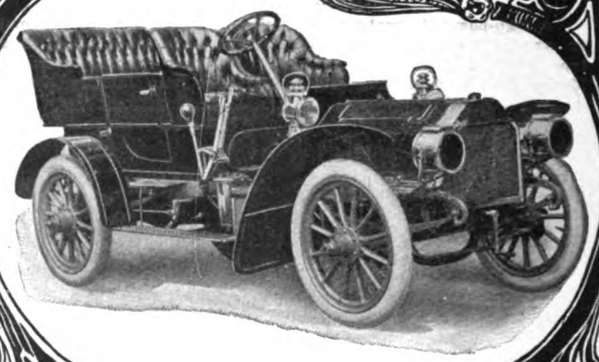
First in One Kilometer Race

WHITE SEWING MACHINE COMPANY,

CLEVELAND, OHIO.

Peerless

The Car of Achievement



SECOND IMPRESSION OF A PEERLESS CAR

COMFORT

You are not only impressed with the beauty of a Peerless Car, but also with its comfort and

EASE IN RIDING.

This is a mechanical problem that goes far deeper than mere upholstery. It depends on the size of the tires, length of wheel base, the spring construction and

DISTRIBUTION OF WEIGHT

of the car.

A ride in a Peerless Car will convince you that these important requirements have all been fully and perfectly met. You are not bounced to pieces over rough roads, but you are pleased to see how the Peerless runs along as smoothly, silently, and comfortably as a Pullman.

24 H.P.	30 H.P.	35 H.P.	60 H.P.
$3,200	$3,750	$4,000	$6,000

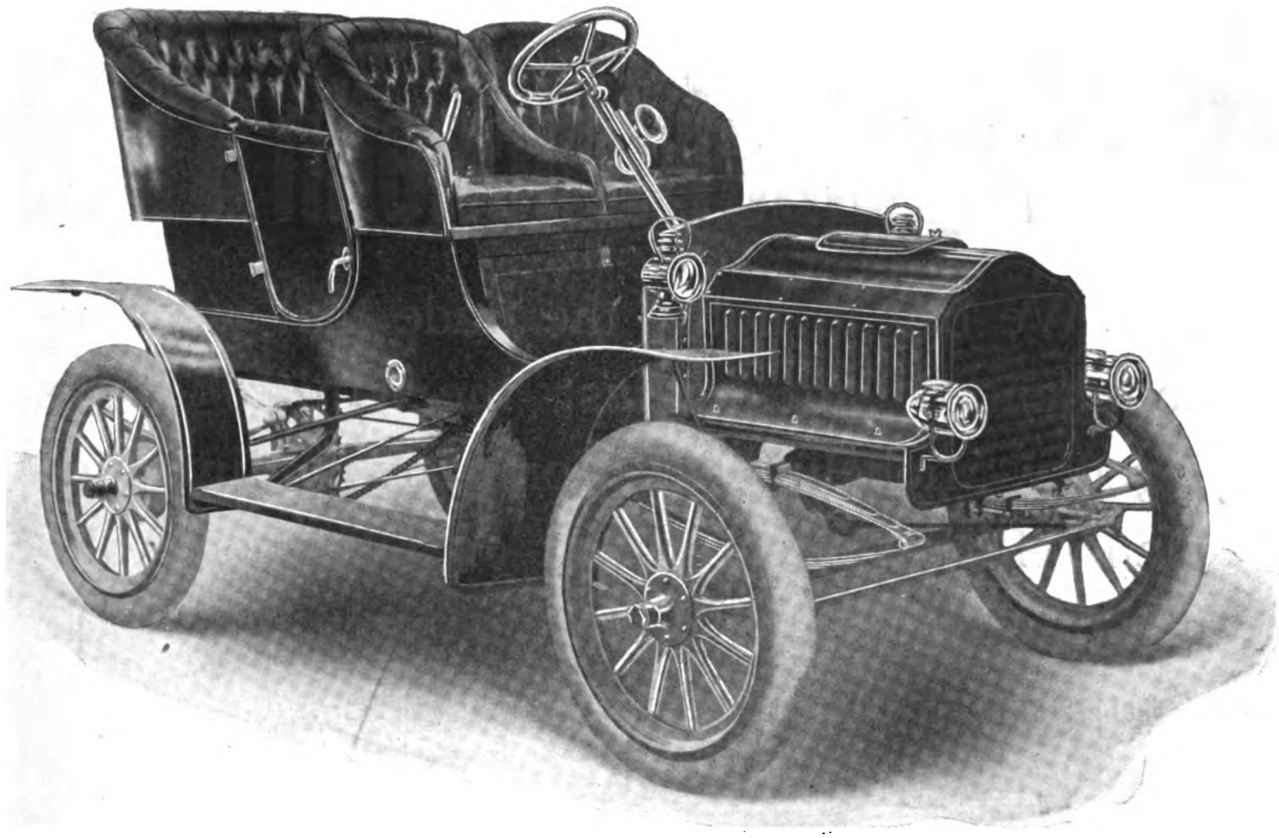
Send for Catalogue now ready.

PEERLESS MOTOR CAR Co.

CLEVELAND OHIO

MEMBER A.L.A.M.

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FORD MODEL "F."

Model "F" has behind it the prestige of "Ford Success." It is designed for Automobile users who want a practical and useful touring car at a price which makes such a vehicle a profitable investment, rather than an expensive luxury. For actual reliability, attractive style and economy of maintenance, the Ford Model "F" is easily ahead of any two-cylinder car made.

SPECIFICATIONS OF MODEL "F."

Price—$1200.00.
WEIGHT—1400 lbs.
MOTOR—Ford two cylinder horizontal opposed.
WHEEL BASE—84 inches.
TREAD—Standard wagon.
WHEELS—30 inches.
TIRES—3½ double tube optional.
MAXIMUM SPEED—35 miles an hour.
CAPACITY GASOLINE TANK—9 gallons.
CAPACITY OIL RESERVOIR—3 pints.
COOLING WATER CAPACITY—4 gallons.
COLOR—Rich dark green, yellow running gear.
UPHOLSTERING—Black, of best leather, handsomely tufted.
EQUIPMENT—2 side oil lamps, post horn and necessary tools.

We want our friends, critics and competitors to examine this car. Full information about all our 1905 cars is given in our new catalogue. Send for it to-day and get posted on the most advanced types of American Automobile Construction.

FORD MOTOR COMPANY, - Detroit, Mich.

Canadian Trade Supplied by Ford Motor Co. of Canada, Ltd., Walkerville, Ont.

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Suit Against Michelin Tires

We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

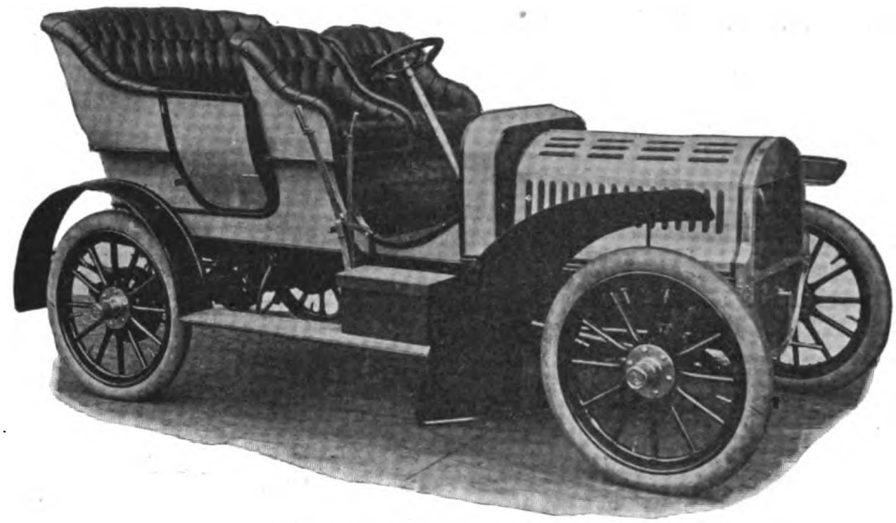
The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co.
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO.. Indianapolis, Ind.

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THE ONLY AIR-COOLED CAR THAT LOOKS LIKE A REAL AUTOMOBILE AND IS ONE.

THE FRAYER-MILLER



Cooled by CONTROLLED AIR

No Tanks
No Radiators
No Pumps

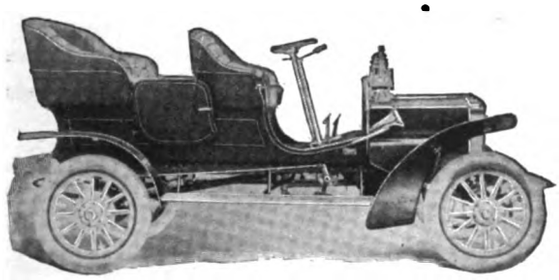
24 HORSE POWER. 1650 POUNDS.

Contains more ingenuity to the square inch than any other car in the world,

WRITE US IF A CAR OF THE SORT INTERESTS YOU.

OSCAR LEAR AUTOMOBILE CO., Columbus, Ohio.

NORTHERN AUTOMOBILES.



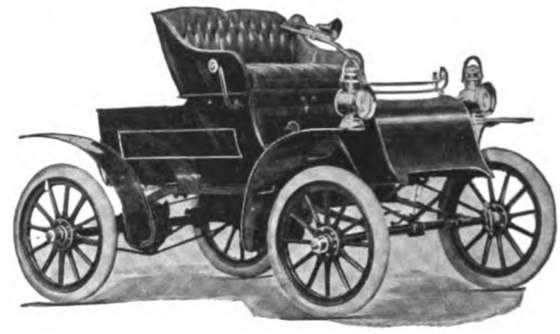
1905 Touring Car, Side Entrance, opening on direct line to Running Board. Price $1700.00.

Chainless. Dustless. Noiseless.

Absolutely free from Vibration. *"No expense but the gasoline."*

The refinement of simplicity. Number of parts reduced to the minimum. Easy to operate, easy to understand, and nothing to get out of order. Repair bills practically eliminated. The ideal car for American roads from every standpoint. Three point motor support prevents any possibility of machinery being thrown out of alignment. Roads which other automobiles cover at peril of machinery and passengers, present no difficulties to the Northern. Every part is made in our own shops, and fits to perfection.

Planetary Transmission. 18 H. P. double opposed motor. Power transmitted direct to beveled geared divided rear axle. Northern Automatic Compensating Carburetor, "built to fit the engine," assures a perfect mixture at all speeds. In finish and upholstery the Northern is superb. You may pay twice as much, but you cannot buy a better finished or more reliable Touring Car.



NORTHERN RUNABOUT.

7 H.P. BETTER THAN EVER.

Has full back molded seat, larger oil cups, larger body and new carburetor. It is the ideal machine for the physician—the man of business—or for family use. Price, $650.00.

Write for catalogue No. 16 and get in touch with "Northern Improvements."

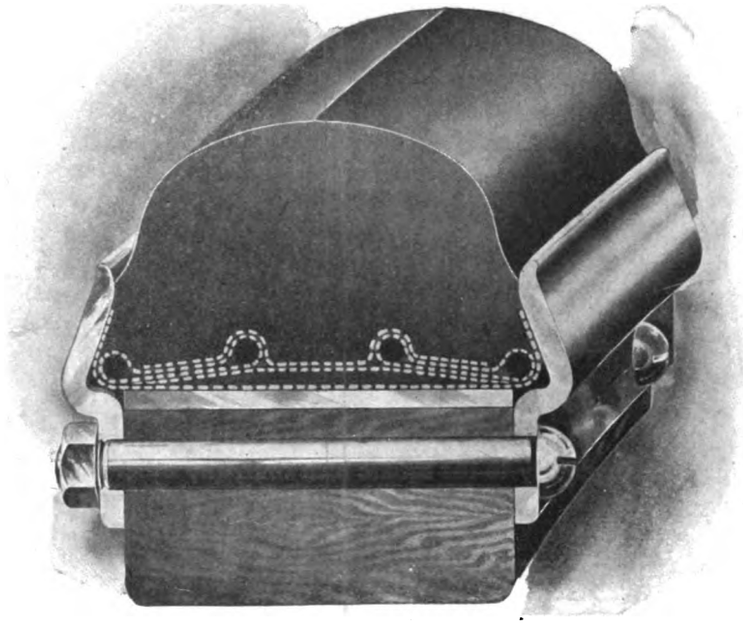
NORTHERN MANUFACTURING CO., Detroit, U. S. A.

MEMBER A. L. A. M.

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The Test of Time and Service

on the heaviest trucks and hardest used delivery wagons by the best known and most substantial concerns in the country prove



THE TURNER ENDLESS SOLID TIRE

to be the only successful tire for commercial vehicles.

ONCE ON THE RIM, THERE'S NO COMING OFF.

Investigate its merits. It is in universal use throughout the entire country.

SEND FOR OUR LATEST CATALOGUE.

HARTFORD RUBBER WORKS CO., Hartford, Conn.

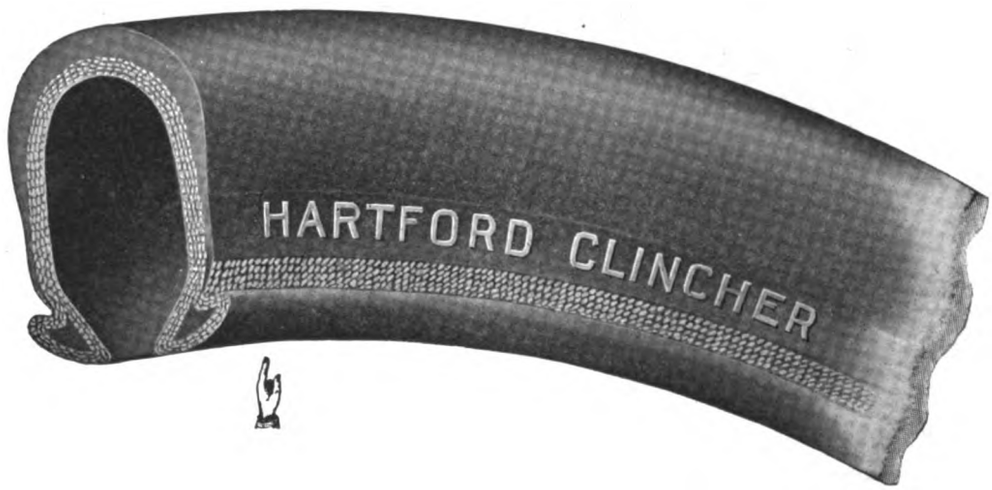
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THE
HARTFORD CLINCHER TIRE

REPRESENTS THE HIGHEST

STANDARD

OF ITS TYPE



Asbestos Fabric
Prevents Rim Cutting
Hard Bead, Increased Durability
at a Weak Point

Other Manufacturers Pay Tribute to

HARTFORD { **Open Cure**
Extra Tread
Details of Quality
and Construction

by Adopting HARTFORD Methods

SEE US AT CHICAGO SHOW

THE HARTFORD RUBBER WORKS CO.,

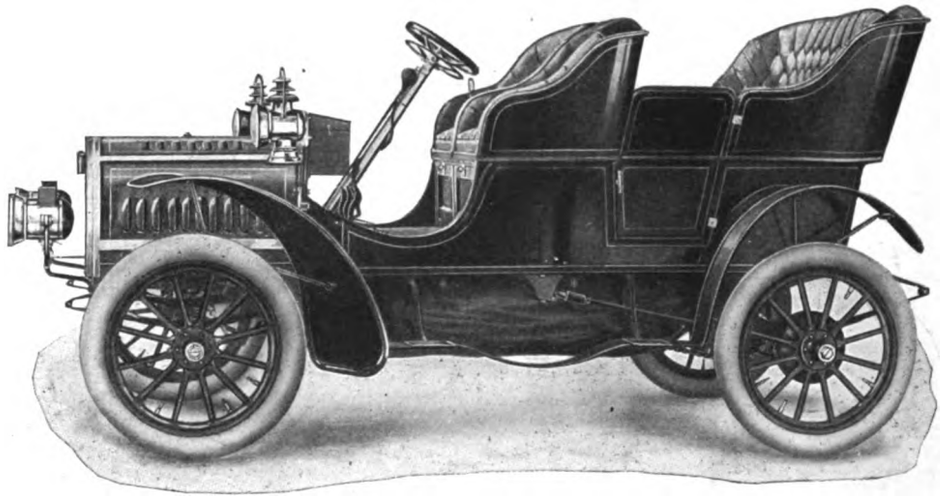
Factories, No. 1 and 2, Hartford, Conn. No. 3, New Brunswick, N. J.

BRANCHES:

Boston, New York, Philadelphia, Buffalo, Cleveland, Chicago, Denver, Detroit, Minneapolis, San Francisco, St. Louis, Los Angeles.

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Rambler



SURREY, TYPE ONE, 18 H. P., $1350.

The New York Automobile Show has demonstrated that no other vehicle of the same price has the beauty, the power and the reliability of this model. Dealers and users from all over the country have shown the greatest enthusiasm over it.

They are most loyal who know the RAMBLER best; and it has been encouraging to know that after their first season with our automobiles, users do not discard our cars for other and higher priced makes, even though their tastes along other lines are extravagant and would be gratified by the purchase of higher priced vehicles, were it not for the remarkable simplicity of our models and the consequent ability to dispense with the service of a chauffeur, and to enjoy the pleasure of being able to run and care for the machine without such help.

OTHER MODELS, $650, $750, $850, $1500, $2000, $3000.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 302-304 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

NEW YORK AGENCY, 134 West 38th Street. REPRESENTATIVES IN ALL OTHER LEADING CITIES.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, February 2, 1905. No. 19

JEFFERY WANTS A FACTORY

Rambler Plans for Expansion Make Necessary a Second Plant—Tenders are Invited.

It should be necessary to say scarcely more than that Thomas B. Jeffery & Co. want a factory to bring them proposals innumerable. And the fact is, as intimated, that Jeffery & Co. do want a plant, and that they are ready to receive tenders.

Of course, the makers of the well known Rambler cars already have a prodigious factory at Kenosha, Wis., but it is already well filled and fully occupied with the production of runabouts and two cylinder touring cars, and it is with an eye to the enlargement of the Rambler line, so that it may include vehicles of all types. that an additional plant is wanted and quickly. There is ample room at Kenosha for another building, but Mr. Jeffery has set ideas on the subject of producing different models in different factories, and it is to carry out this scheme of manufacture that another factory is desired. The Rambler people are very much in earnest in the matter, "indispensable" being the word they employ in voicing their wish to obtain separate factory space.

With so many patent-possessed promoters tempting local communities by dangling suggestions of automobile factories, and with so many of them eagerly swallowing the bait, the opportunity to have such a substantial and long established concern as Jeffery & Co. locate "in its midst" should keep the wires to Kenosha pretty warm during the next few days. It is such an opportunity as does not often present itself.

Yale Gets Into New York.

The Yale car finally has been placed in position of obtaining its due in the metropolis. which is to say that the New York agency has been placed in the hands of Frank A. Sanford. Mr. Sanford has placed a goodly order for the well known Toledo made cars, the first of which will arrive about the time his salesroom is ready for it. He has several locations in view, and will reach a decision in the matter within the next week. Sanford formerly was a very energetic factor in the piano business in Brooklyn, and there is no reason to doubt that he will bring the same quality to bear in the automobile trade.

Blomstrom Seeks Site in South.

R. P. Janney, representing the C. H. Blomstrom Motor Co., of Detroit, Mich., is reported in New Orleans, La., "looking about him with a view to locating an automobile and power launch factory in or near the city." Janney, it is added, "is well pleased with New Orleans, its climate and promise of future greatness, and is, in fact, in love with the Crescent City, and believes that it will offer an excellent field for him in his efforts to establish a factory of the kind alluded to."

Year's Exports Show Big Increase.

Although the totals for the year 1904 show an increase of more than $250,000 in American automobile exports, the December shipments did not serve to swell the figure. For the last month of the year the value was $214,516, as against $223,548 in December, 1903. The year's business aggregated $1,897,510, as compared with $1,643,029 last year and $1,069,782 for the twelve months of 1902.

How Iroquois is Tempting Rochester.

According to a Rochester (N. Y.) source, the Iroquois Motor Car Co., which hopes to establish its factory in that city, "has a very neat car upon the streets to demonstrate that they at least have made one car."

It is added significantly that "the wives of prospective stockholders are enjoying the sensation of being driven about the streets in the handsome machine."

Clarkmobile Becomes the New Way.

The Clarkmobile Co., of Lansing, Mich., has been reorganized and incorporated under the name of the New Way Motor Co., with a capitalization of $100,000. The officers are: President, A. C. Stebbins; vice-president, J. W. Knapp; treasurer and manager, William H. Newbrough; secretary, E. W. Goodnow.

CONRAD'S LAST SAD RITES

Trustee's Report Shows What it Costs to Wind-up a Bankrupt Estate.

The once prominent Conrad Motor Carriage Co., Buffalo, is now but a memory. The trustee in bankruptcy has filed his final report and the estate is now formally closed. The report is interesting, as showing what it costs to wind up a bankrupt concern.

The receipts during the receivership totaled $52,786, of which sales of merchandise accounted for $34,331.04 and of machinery $2,710.48. The book accounts brought $855.21, the office furniture $68, and "remnants" $1,426. The real estate was sold for $12,000.

Some of the more important disbursements were as follows: Labor and wages in conducting factory, $13,411.23; merchandise in conducting factory, $9,602.38; expense account in conducting factory, $2,659.13; advertising account in conducting factory, $355.74. The creditors received in two dividends, aggregating 6 1-5 per cent., $6,208.04, and the mortgage holder $10,795.26, the total disbursements being $49,024.62. Payments to bankruptcy officials and lawyers accounted for the remainder of the estate of $52,786.74, their fees being as follows: Receiver's commissions, $109.28; services and expenses of receiver's attorneys, $532.09; commissions, fees and court expenses of referee in bankruptcy, $360.71; services and expenses of attorney for petitioning creditors, $159.50; trustee's commissions, $667.87; postage, printing, costs, legal expenses and services of attorneys for trustee, $1,932.67.

Premier in New Factory.

The Premier Motor Mfg. Co. are now in possession of their new plant at the corner of Georgia and Shelby streets, Indianapolis. The new place gives them much needed elbow room.

Lamb with $10,000 Capital.

The Lamb Automobile Co., Clinton, Iowa, has been incorporated, with $10,000 capital. Besides selling accessories, the new firm will handle the Thomas, Cadillac and Waverley cars.

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SNOW FOLLOWED THE SHOW

But Failed to Chill Good Effects of Exhibition—What the Dealers Report.

"Sell cars while the enthusiasm runs highest" is the watchward in the trade to-day, and all the branch houses and the agents in the city are following it to the letter.

Results in the shape of sales from show inquiries which have been followed up during the last week are such that a general feeling of satisfaction prevails.

"We were selling four to five cars a day when the blizzard swooped down on us and slowed things," said Carl Page, manager of White's branch to a Motor World man on Monday, "and do you know," he continued, "there were a number of people who insisted on having cars demonstrated even in the height of the storm. Our men were almost frozen to death, but as long as buyers wanted to ride they were willing, and our demonstrating cars were out all through the storm."

Colonel K. C. Pardee, who upholds the New York end of the Maxwell-Briscoe line, was likewise enthusiastic on the question of sales since the show, and willing to convince all comers that the Maxwell cars are the only things on wheels.

C. E. Duerr, of C. E. Duerr & Co., not only reaped a harvest at the show, but is still garnering the grain. "If you ride in a Royal tourist you'll buy one, and that's not advertising copy alone, but experience," he said when questioned on Monday. "I never saw so many people hand out their money after a single demonstration as at the show. On the average we gave them one ride, and that did the business, and we were ready to get the next man's order. I think I can justly lay claim to the sales record of the show in that I disposed of no less than fourteen cars in one day—that is, the agency sales record, for every one of those was an individual purchaser who left his check in part payment right then and there. Oh, of course, agents place orders from the makers for twice that number of cars at a time, but then it's up to the agent to sell—that's another story entirely. These are all bona fide sales to users. Since the show we have almost had to keep people waiting in line for demonstrations, and the Royal is certainly carrying off honors there, too. We take the care over to "Dufffy's Hill, "on Lexington avenue, just to show the intending purchaser what its hill climbing capacities are, and I tell you we surprise him. Why we went up "Duffy's Hill last week time and again on the high gear, once with eight occupants in all, or a load of something like 1,300 pounds. There are mighty few grades like that to be met with in a month's touring."

Corroboration of the utter disregard for weather conditions was forthcoming on all sides, and in one instance was amusing to say the least.

"We had an appointment to demonstrate for Wednesday afternoon, when the blizzard was at its height," said Harry Unwin, of the Harrolds Motor Car Co., "and as the party happened to be a lady seventy-three years old, we 'phoned her and informed her that, of course, we presumed the appointment was off and wanted to know what other time would be convenient. But it was no go; she insisted on having a ride, weather or not, and we booked an order for a Pierce Arrow with a Stanhope top within five minutes of the time she came back."

"We haven't got a great deal to show just now because we sent our entire exhibit to Philadelphia," said Robert P. Parker, manager of the Haynes branch, "but we have been doing plenty of demonstrating in the mean time in spite of the weather, and now that we're through with shows, so far as this end is concerned, we can settle down to business in earnest."

"Well, we certainly can't complain of the number of inquiries we are receiving every day or the number of people who are anxious to have a car demonstrated and equally anxious to buy," replied Percy Owen, head of the Winton department, to the query as to how matters progressed during the interval since the show, "but," he added, "people are wiser than ever before, and they have to 'see the wheels go around' and know the why and wherefore of a thousand and one things that never entered the buyer's head a few years ago. Why, do you know, I've actually had a man come in and hand over his check without even inspecting the car, as much as to say, 'One Winton, please; send it soon,' as if he were buying a hat. Now he takes good care to see that it fits, and I take it to be a good indication of the sound, businesslike basis that the industry as a whole has reached."

Pardee Takes on the Stoddard.

R. Harry Croninger, sales manager of the Dayton Motor Car Co., who has spent the past several days in this city, has placed the New York agency with Colonel K. C. Pardee, 317 West Fifty-ninth street.

The first of the new 25 h. p. four cylinder Stoddards came to New York with Croninger, and is now in evidence at the Fifty-ninth street place. It proves to be a good looker and is of the self-starting type; in this respect it embodies a feature which the makers claim guarantees self starting without fail —not given a hundred and one favorable conditions, then upon switching on the engine will start, but any time there is any compression in any of the cylinders sufficient to turn over, the spark alone will do the work otherwise entailing a use of the crank. This is accomplished by giving the commutator, which, by the way, follows the latest tendency in being placed on a vertical shaft at the rear of the engine and just in front of the dash, an unusual amount of latitude where the advance and retard adjustment is concerned.

THE RANGE OF RUBBER

How Demand and Supply Have Increased and Affected Prices of all Grades.

During the last ten years the imports of raw rubber into the United States have nearly doubled, says the India Rubber World. If we use the official customs returns for the fiscal year ending June 30 the comparison is as follows: 1893-'94, 33,737,783 pounds; 1903-'04, 59,015,651 pounds.

Meanwhile the imports for consumption in other countries probably have increased at a corresponding rate. How, then, can the rubber supply be said to show a decline?

The rate of production has not shown a decline. But that is not the question. The natural supplies of rubber are no greater now than at any given date in the past. The natural rubber area is no greater now than fifty years ago. But meanwhile the yearly production of rubber has increased a hundredfold. The point to be made is that this rate of increase must some time reach a limit. The limit has already been reached in a great number of regions which might be named.

America has consumed millions of pounds of rubber obtained from Africa and produced by processes which enabled a full grown man to get together one pound of the material by working a week on roots torn from the ground. A second crop of roots was never obtainable in the same area. The great bulk of the African rubber output to-day is from lianes (creepers), which never yield a product but once. All the rubber imported from South America under the name of "Caucho" is obtained by cutting down the trees which yield it.

The fact that rubber has so long been obtainable is due to the enormous original supply. But this supply has not been increased or even kept up to the original limits by any process of nature, and the rubber situation to-day is comparable to a private fortune of fixed limits, which is diminished in proportion as its owner draws upon it. He may spend twice as much this year as last, but this does not make him twice as rich; it only hastens the time when he will become bankrupt.

The same customs returns from which we quoted above give the following as the import values of the rubber covered in the statistics of the two years under consideration: 1893-'94, $15,077,903; 1903-'04, $40,444,250.

The chief significance of these figures is that the average import value of rubber—good, bad and indifferent—has increased in ten years from 44.6 cents to 68.4 cents.

Is such a difference—almost 53 per cent—explainable on any other ground than that production has not been developed at a rate commensurate with the increased demand?

The Simpson-Sterns Automobile Co. has begun business in Louisville, Ky. They have secured the agency for the Pierce-Arrow.

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BALTIMORE ON GASOLENE

Fire-Swept City Passes Fair but Stringent Measures—Garages Will Not Suffer.

Baltimore's precaution to guard against any more fires has resulted in the passage of an "anti-gasolene" ordinance, which says that hereafter gasolene can only be used in automobiles and engines, and under no consideration will this volatile fluid be allowed for cooking and other household purposes in Baltimore. This conclusion was arrived at last week at a meeting of the Baltimore City Council by the passage of the Gill anti-gasolene ordinance by a vote of 15 to 8.

Under the provisions of this ordinance gasolene for a garage may be stored in an iron, steel or copper tank, the design of which must be approved by the inspector of buildings, and to be buried at least two feet underground. The maximum amount of gasolene stored therein shall not exceed 275 gallons, and only one tank will be permitted on the premises. The right is also given to keep gasolene at automobile stations in non-corrosive cans to the amount of fifty gallons. The further provisions of the ordinance follow:

"Sand shall be kept in buckets fit and available for absorbing any waste oil that may fall upon the floor; and such sand, when saturated, shall be promptly removed to a place and burned; the use of sawdust for this purpose is prohibited.

"No naphtha or gasolene shall be put into or taken out of an automobile within fifty feet of an open fire, nor until lamps or other apparatus intended to be carried upon the vehicle for illuminating purposes or as pilot lights have been extinguished.

"In no case shall naphtha or gasolene be allowed to run upon the floor or to fall or pass into the drainage system of the premises.

"Naphtha or gasolene shall not be carried in open vessels about the premises. If it is necessary to convey naphtha or gasolene it must be done in an approved inclosed can or cans, with an automatic closing device which shall effectually close the same and of the capacity most closely adapted for filling the machine, but not exceeding five gallons.

"If it is necessary to empty the tanks of automobiles, it shall only be done with the utmost precaution against fire, and the fluid must be returned to the approved can or cans directly with the automatic closing device which shall effectually close the same."

Diamond Claims First Tire.

In a chapter on the history of automobile tires in the tire users' text book, just issued by the Diamond Rubber Co., the assertion is made that this company manufactured the first pneumatic automobile tires in America. This is a distinction that for several years has been claimed by the Diamond Rubber Co., and which, they say, has not been challenged.

The first set of American pneumatic motor tires is described as being of the single tube variety, and while it is not to-day being looked upon as at all remarkable, they were the means, the Diamond people state, of turning the attention of the pioneer American automobile builder from steel and cushion rubber tires to those of the pneumatic type. In fact, the original set of single tube pneumatic tires were so satisfactory as compared with those which had up to that time been used that an order for 100 sets was immediately placed by a concern now prominent which was at the time just making a start in automobile manufacturing. By the next season the demand for these tires was very considerable, and other rubber manufacturers began producing them.

The Week's Incorporations.

New York, N. Y.—The Auto Mart, under New York laws, with $30,000 capital. Incorporators: J. D. Cooper, H. Teutic and F. S. Hanley.

New York, N. Y.—Bonton Motor Car Co., under New York laws, with $30,000 capital. Incorporators: A. C. Field, L. M. Field and B. F. Schwartz.

Des Moines, Ia.—Iowa Automobile and Supply Co., under Iowa laws, with $8,000 capital. Officers: C. R. Prouty, president; F. S. Dusenberg, secretary and treasurer.

Paulding, O.—Paulding Motor Car Co., under Ohio laws, with $10,000 capital. Incorporators: W. H. Phipps, C. F. Price, I. H. Loughlin, E. N. Travis and C. W. Burgner.

Cleveland, O.—The State Automobile and Supply Co., under Ohio laws, with $5,000. Incorporators: W. B. Brown, J. W. Burrell, H. C. Gahn, R. E. Dupiene and W. E. Patterson.

Los Angeles, Cal.—Auto. Rental & Repair Co., under California laws, with $50,000, of which $7,500 paid in. Directors: J. M. McLeod, D. A. Casselmann, F. W. Richey, E. C. Richey and J. H. Andrews.

Milwaukee, Wis.—Bates-Odenbrett Automobile Co., under Wisconsin laws, with $30,000 capital, to do general business in automobiles. Incorporators: John W. Foster, Josephine Foster, Robert G. Bates and George L. Odenbrett.

Detroit, Mich.—The Automobile Equipment Co., under Michigan laws, with $50,000 capital, to manufacture electric, steam and gasolene vehicles. Incorporators: Henry Courie, Philip E. Hawley, William F. Cowie and Henry A. Cleland.

Detroit, Mich.—Detroit Steam Engine Co., under Michigan laws, with $50,000 capital, to manufacture and deal in automobiles, engines and motors. Incorporators: John D. MacLachlin, Ovid B. Law, William E. Higginbotham and William G. Malcomson.

Adams to Sell Knox Trucks.

Fred H. Adams, who until recently was with the Knox Co., in Cleveland, O., is now sales manager for the Knox Motor Truck Co., in Springfield, Mass. Adams, who has placed a large number of delivery wagons and large trucks with the department stores in Boston, is well fitted for his new office.

CHICAGO IS READY

Western Show Opens on Saturday, but Very Little Newness is in Prospect.

Because of the precedence and prominence of the New York exhibit, the Chicago Show, which opens on Saturday evening next, will, as always, throw out but reflected glory. However it may appear to Chicagoese, to the trade at large it is merely the reopening of a book already perused to which but a few new paragraphs have been added.

This year these added paragraphs seem fewer than ever, and as the West and South were present at the New York function in much greater force than on any previous occasion, even in the West the Chicago Show can scarcely hold the same amount of interest for the Western trade that was previously its portion.

This is not meant as a disparagement of the Western exhibit, which cannot well fail to prove of some influence and effect, but from the standpoint of the trade in general it promises little that is new, and it is to be added comparatively little real business. Despite the long and persistent effort to avert it and to disguise the fact, the unbounded success of the New York display is likely to finally force home the truth that Chicago's is a local, or at best a neighborhood, show.

How little newness it holds for the man who attended the New York function is shown by the official list of those who were absent therefrom and who will have exhibited only in Chicago. In all there are but fifteen automobile manufacturers in this category, and not more than five of them are large or important.

The full list of those who did not exhibit in New York, but who will be present in Chicago, is as follows:

M. F.—Main floor.
M. F. A.—Main floor annex.
G.—Gallery.
G. A.—Gallery annex.

Adams Co., Dubuque, Iowa, Space 100, M. F.—Adams-Farwell gasolene cars.

Auburn Automobile Co., Auburn, Ind., Space 142, M. F.—Gasolene cars.

Autocar Equipment Co., Chicago, Space 266, G. A.—Automobile trucks.

American Electric and Novelty Mfg. Co., Chicago, Space 291, G. A.—Electrical novelties.

Banker, A. C., Co., Chicago, Spaces 115 to 117, M. F.—Supplies.

Beckley-Ralston Co., Chicago, Spaces 307 and 308, G. A.—Supplies.

Borland, C. B., Co., Chicago, Spaces 317 and 318, G. A.—Accessories.

Chicago Caloric Engine Co., Chicago, Space 16, M. F.—Caloric engines.

Chicago Storage Battery Co., Chicago, Spaces 267 and 305 and 306, G. A.—Batteries.

Cullman Wheel Co., Chicago, Space 268, G. A.—Equalizing gears and sprockets.

(Continued on page 915)

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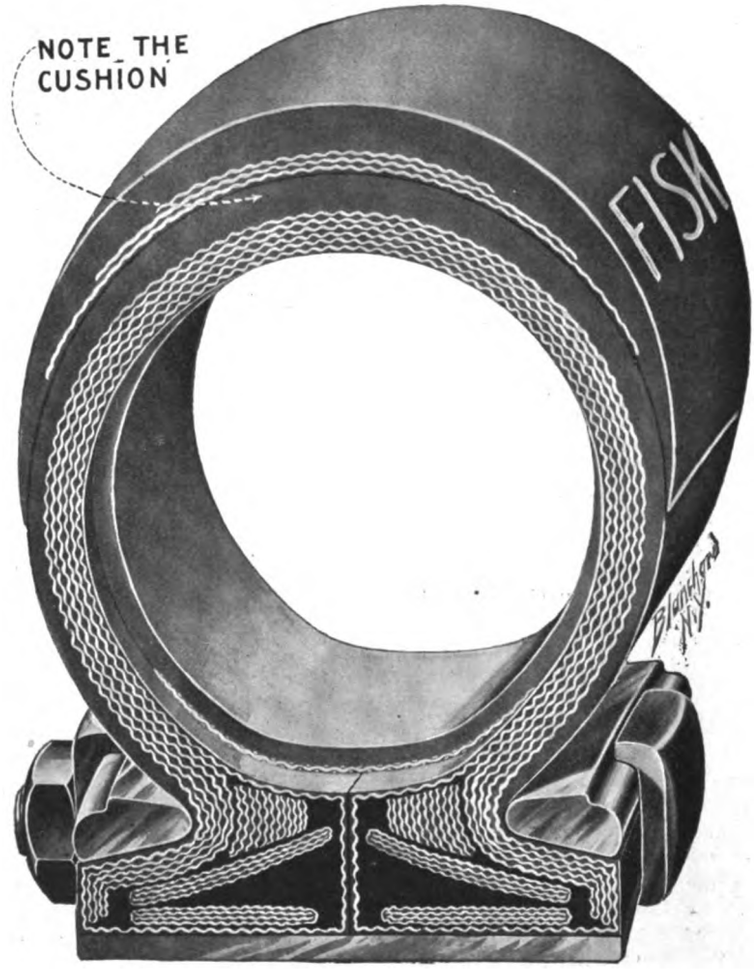
NO OLD BOOTS

OR

NO DISCARDED FIRE HOSE

IN

FISK TIRES



The rubber used is **new**, pure Para gum,

And as for

THAT FISK MECHANICAL FASTENING

Pshaw! You all know there's nothing half so good to be had with any other tire on the market.

The Fisk Rubber Company, Chicopee Falls, Mass.

BRANCHES: New York, 754-756 Seventh Ave. Chicago, 52 State Street.

BOSTON, 226 Columbus Ave.
SPRINGFIELD, 40 Dwight St.
NEW YORK, 754-756 Seventh Ave.
PHILADELPHIA, 828 Arch St.
ATLANTA, 103 N. Pryor St.
SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
DETROIT, 254 Jefferson Ave.
MONTREAL, CANADA

CHICAGO, 1251 Michigan Ave.
ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
MINNEAPOLIS, 704 Hennepin Ave.
DENVER, 1534 Glenarm St.
SAN FRANCISCO, 114 Second St.
LOS ANGELES, 1034 So. Main St.

LONDON, ENGLAND

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"Automobile racing has been denounced as "tainted with commercialism," because the manufacturers of racing machines have seen in it opportunities to advertise their products. If it is ever proved that the racing meets are not purely sporting events, but mere annexes of the advertising departments of the makers, they will suffer a great setback in popular interest among all classes."—Extract from editorial in the New York Sun.

Florida and What it Teaches.

Sport and commercialism won't mix. As when oil and water are poured into the same vessel, oil rises to the surface, so does commercialism inevitably come to the top when the effort is made to have it comingle with sport.

In the realm of sport, commercialism is designated professionalism, and it is a matter of history that while life lasts professional spirit is strong. The professional spirit is the "What-is-there-in-it-for-me?" spirit. It was this spirit that originally inspired the Florida speed carnival. It was this spirit as embodied in the persons of hotel keepers and most of the others concerned that has dominated the affair. It was a life-long, dyed-in-the-wool professional who held the managerial reins. There were trophies asked for and obtained solely on a commercial basis. Favors to newspapers or newspaper writers were distributed to further purely commercial interests.

It was inevitable that the first attempt to rescue the sport from such professional clutches would result in some turmoil. The effort was made this year, and, of course, turmoil resulted. It cast a shadow on and affected the entire carnival. The turmoil has, however, achieved one good purpose. It has resulted in the formation of organizations that draw a distinct line between sport and commercialism, as they apply to the Florida carnival. The Ormond hotel keepers—good fellows and keen business men, all of them—and their following have finally come out into the open and in their true commercial guise. They mean that the carnival shall continue to be what the Motor World alone had the hardihood to truthfully describe it, i. e., a "hotel annex." They will strive to use the sport to boom their business. The former professional six days' bicycle rider who has striven so valiantly to bring boarders to their several hotels in various parts of the country, and his "pals" and following, are all lined up at the hotel crib and again assured of free transportation, free beds and free board, which is their return for "services rendered."

With the issue so well defined, there no longer exists reason why real sportsmen and men of prominence should permit themselves to be "used" to further the business of a particular hotel or hotels. Henceforth, it will be easy to distinguish between men actuated by love of sport and those possessed by the "What-is-there-in-it-for-us?" spirit.

It would seem, also, that the way of the American Automobile Association is immensely simplified. It will not now be difficult for the organization to make its choice, and if it has strength of backbone and the courage of its convictions, it will no longer temporize. It has everything to gain and nothing to lose by taking a determined and unbending stand. It is the only way properly to deal with the grasping professional spirit and to keep the sport free from stains of commercialism. "Life is a nettle. Disturb it, it stings. Grasp it firmly, it stings not."

Of course, there are professional vultures in the offing, waiting to feast on deceased limbs that may be amputated and ready to create a mighty clatter, but determined men do not concern themselves with carrion.

It would, indeed, be well if the A. A. A. finally recognized that oil of any kind will not mix with water, and that it is flying in the face of real sport in coupling men who compete for sport's sake and those who compete for the money there is in it, or because they are hired to compete. They are not of a class, and never will be so. The ultimate outcome of a rule that attempts to make them one will be to drive out the sportsmen. The present result of the rule is to afford a refuge for professionals in other sports, notably cycling, in which a number of them have left soiled pasts or such dirty trails that, diminished though cycling may be, these same men now strutting peacock-like in the realm of automobile racing, would not dare raise their heads without bringing upon them a volley of brickbats.

Rising Superior to Weather.

Few things have served to demonstrate so effectively the present high grade of efficiency reached in automobile building as the performance of the numerous cars of various makes that braved the recent blizzard, which prevented every wheel of other kinds from turning while it lasted, and in some instances for a day or two after.

New York City's transportation facilities, with the exception of the underground, were annihilated; the elevated roads ran when they could, and the surface cars not at all, and many of the latter, as well as wagons snowed under in all parts of the metropolis, showed how absolutely helpless they were in the face of the storm. Yet through it all automobiles made their way about, frequently being out in the thick of it merely for demonstration purposes, such was the enthusiasm of many would-be purchasers of cars right after the New York show, and not in a single instance did a car fail by the wayside or fail to return to its garage when it was expected. The only extra preparation needed was in the shape of chains or rope about the drivers in order to obtain traction in the extremely fine snow, which rendered walking dangerous, and the car was equipped and ready to combat the drifts, which frequently were over the hubs.

A howling gale, snow drifting many feet

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deep, and a temperature considerably below freezing point—conditions which made street traffic of any other nature whatever an absolute impossibility—could not prevent the automobile from doing its duty, and the laurels thus earned redound more to its credit from the fact that the tests were carried through by the everyday car, with its usual equipment and its usual load of passengers—it was not an ordeal prepared for well in advance. No attempt was made to put through an endurance trial of any nature, the cars were sent out regardless of the weather, and amply demonstrated their readiness to overcome obstacles insurmountable by any other means of locomotion.

Contrast this picture of the automobile with that of its predecessor of only half a decade ago, and the marvellous progress made in that very short interval cannot but strike even the prejudiced observer as a telling tribute to the genius of the men who have persevered in the face of heart-breaking difficulties and out of the crudities of first attempts produced a self-propelling vehicle in which reliability is a predominant feature. But few years ago a score or more of the pioneers started on a ten-mile run, and under the most favorable weather conditions, over the best of roads—Riverside Drive—the great majority of those that got that far succumbed to a grade which now does not call for a change of gears. Compare the results of the attempted hundred-mile run to Philadelphia a few years ago, in which a pitiful minority of two cars survived the ordeal out of many times that number, with the thousand and fifteen-hundred-mile trips made to-day at a speed but little short of the best railroad service, and the verdict must be that progress nothing less than astounding has been accomplished in the interim.

Apart from the endless improvement in everything connected with the car that has tended toward its perfection as now known, probably no one other feature is so largely responsible for its endurance and capacity to get through in the face of every obstacle as the wonderful increase in power. From the six horsepower car of five years ago we now have the sixty of to-day, intended for the same purpose—touring—and that much better fitted to accomplish its task.

As the result of this there will probably come to be established within the course of the next year or so three to four distinct types of cars, rated according to their power. From twenty to thirty horsepower will be the general utility car, suitable for everything except the heaviest touring, from thirty-five to fifty horsepower, a car adapted to meet the most trying requirements of the latter service, and sixty horsepower for those who wish a large additional reserve, both of the latter, of course, having all the advantages of the first and more general type. An increase over this will be the exception, racing cars excluded, and doubtless with the constantly increasing efficiency of the motor, it will never be found advisable to go beyond these figures for the purposes in question.

Significance of Speed Records.

The usually sane New York Times, which, however, "throws a fit" whenever an automobile record is broken and hugs itself for joy whenever a repressive law is introduced, had two successive spasms on Wednesday. The crop of records on the Florida beach was directly responsible for the convulsions. The Times cannot see that any earthly good is served or can come of such performances, or of cars capable of them. It may be pardoned for not knowing that most of the cars are incapable of practical use on the common roads, even if their owners so willed, but even a frothing motorphobe ought to be able to discern that the vehicle or engine capable of ninety or a hundred or more miles an hour on a road points the way to such an annihilation of time and distance on rails as to on occasion permit even an editor of the Times to eat breakfast in New York, lunch in Buffalo and dinner in Chicago; it points the way to cut days off of railroad travel between the Atlantic and the Pacific. It points the way to real rapid transit and to at least a partial revolution of passenger travel that will make Boston and Philadelphia mere suburbs of New York. As a man who must have frothed when trolleys and bicycles appeared, the Times may not be able to distinguish such promise, but that is the Times's misfortune.

If the subject is settled on its merits, the bill now pending in the Massachusetts Legislature requiring all vehicles to carry lights after dark should pass without a dissenting voice. It is in the fullest sense what its title implies, "An act providing for the safety of those using the highways." The great trouble in such matters is that a considerable part of the populace is always ready to promote such safety provided it does not mean any expense or inconvenience to them. They are willing and anxious for the "other fellow" to carry the safety promoting devices. But if a lamp is a good thing on an automobile—and there is no room for argument on the point—it is just as good on all other vehicles, not only in Massachusetts, but in all other States. It would seem that drivers of all sorts, as a means of self-protection, should carry them, even without requirement of law.

COMING EVENTS.

Feb. 4-11—Chicago, National Show, Coliseum.

Feb. 13-18—Detroit, Automobile Show.

Feb. 20-25—Cleveland, Automobile Show, Gray's Armory.

March 6-11—Buffalo, Automobile Show, Convention Hall.

March 13-18—Boston, Automobile Show, Mechanics' Hall.

March 13-18—Boston, Importers' Show, Symphony Hall.

March 27-April 5—Washington, Automobile Show.

The Motor Age is proud. It says it was the first publication containing a "show report" and a report of the N. A. A. M. meeting to put in an appearance at Madison Square Garden. It is really too bad that the N. A. A. M. held a meeting. Otherwise the Motor Age, with its "show report," might just as well have appeared the evening the show opened. It served as a splendid example of newspaper "enterprise," i. e., of how an affair can be "reported," that is, put into type—weeks before it actually occurs.

The fact that out of a very much larger total, fully 80 per cent of the cars exhibited at Paris were equipped with magneto ignition, principally high tension, as against 10 to 15 per cent of those at the New York show, is a recommendation not to be lightly disregarded, as during the years in which the American maker was belittling the advantages of the alternator, his foreign competitors were trying it out, so that the result really represents three years of ripe experience.

The Southern express trains must be flyers indeed! The New Orleans Item, in rebuking scorching automobilists, takes occasion to remark that "twenty miles an hour is as fast as the average express train goes." It is also pointed out that streetcars in the Southern metropolis are limited to six miles an hour.

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INDIANA SIFTS ITS BILLS

The Radical Measures Eliminated and a Fairly Reasonable Law is in Sight.

Efforts on the part of six Indiana State Senators to endear themselves to the hearts of their rural constituents by introducing automobile restriction bills seem to have been of no avail, one bill alone having survived. The collection of bills was referred to the Committee on Roads, and the general house-cleaning methods resorted to resulted in what the committee deemed the "survival of the fittest."

Senator Crumpacker's bill, calendered as Senate bill No. 8, was the only one to survive the diligence of the committee, the other measures suffering an ignominious "smothering." Senate bill No. 8 is a medium between the more drastic measures introduced and the milder ones, and is said to have the indorsement of Indiana automobile clubs generally. The bill stipulates that no vehicle with motor power shall be run at a rate of speed greater than is "reasonable and proper," having regard to the use in common of the highway or public place, nor shall it be run so as to endanger the life or limbs of any person. Specifically, the speed limit of eight miles an hour is given for the business section of a city or town; fifteen miles for other parts of a municipality, and twenty miles on country roads. These rates of speed are not to be diminished or prohibited by any public authorities of any city, town or township.

Senator Moore, of Putnam County, who, by the way, had a little bill of his own drafting, and which he cherished a fond desire to have passed, made a strenuous effort to have the speed limit fixed at five, eight and fifteen miles instead of the original provision of eight, fifteen and twenty. The recommendation of the ambitious amending Senator brought down a fierce storm of protest, and the amendment was not added, to the Senator's chagrin.

Another clause of the Crumpacker bill specifies that upon signal from a person riding or driving a horse which has become frightened, any motor vehicle must stop at the signal of a raised hand, and must remain at a standstill until the horse is under control. If necessary to quiet the horse, the motor must be stopped. A white light in front and a red light behind the automobile are required from one hour after sunset to one hour before sunrise. A car must be equipped with brakes, bell or horn, of course. The only important amendment to the original bill relates to registration. Every automobile must be licensed by the Secretary of State, who shall issue numbers, not less than five inches high, which must be displayed at all times. The registration fee is $1.

The House Committee on Roads, not to be outdone by the Senate committee, has reported a bill of which Assemblyman Yencer is the sponsor. With the exception of the penalty clause, the bill is essentially the same as the Crumpacker measure. In Yencer's bill the penalties fixed are $25 for the first violation of any provision, $25 to $100 for the second offence, and $100 to $500 for the third.

Both bills will be reported this week.

Reason Prevails in Tennessee, too.

As was predicted in the last issue of the Motor World, Senator J. R. Jetton's bill to require each automobilist in the State of Tennessee to furnish a bond of $3,000 to defray damages in case of an accident, was promptly turned down by the committee to which it was referred, and the gentleman from Rutherford County has received such a shock that he will probably never introduce another bill of any description, for fear it will meet a like fate.

Another measure was introduced by Assemblyman Stratton, and it has been recommended for passage by the committee after indorsement by leading automobilists of Tennessee. The present bill, which will undoubtedly become a law, indicates its maker to be a fairminded individual, and that is more than can be said of Senator Jetton.

The new bill requires owners to register them with the Secretary of State, paying $2 and receiving a number and certificate, which must be registered within five days in the owner's county. Speed is limited to twenty miles an hour in the country and ten in the cities, but physicians in the discharge of their professional duties are excepted from this speed limit. Machines must be slowed down on approaching horse-drawn vehicles or persons on horseback, and when signalled by the driver or rider shall stop long enough to give the vehicle opportunity to pass.

Kansas Contributes a Bill.

"All automobiles must carry a bell or horn that can be heard a quarter of a mile, a light which can be seen half a mile, and a system of brakes which can bring the machine to a stop within 100 feet." This is the unique portion of an automobile law that is pending before the Kansas Legislature. Automobilists are laughing at this clause, but another portion of the bill that is not likely to give cause to any risibilities is the portion devoted to speed regulations. It prohibits travelling on any highway in the State at a speed greater than 12 miles an hour. When passing another vehicle the speed must be reduced to 4 miles an hour. Four miles an hour is also the maximum speed for all grade crossings.

Lamp Law Hearing on Monday.

The public hearing on the bill requiring all vehicles, save farm and merchandise wagons, to display front and rear lights, which is now pending in the Massachusetts Legislature, has been fixed for Monday next, 9th inst., at 10:30 a. m. It occurs, of course, in the State House in Boston, in Room 426, to be exact.

WANTS 20-MILE CARS ONLY

New Jersey Legislator Obtains Some Notoriety by Following the Ex-Governor's Suggestion.

Although it was not accepted seriously, apparently to conciliate former Governor Murphy of New Jersey and in line with his recommendations, Assemblyman Gibbs, of Camden, has introduced a bill into the State legislature designed to prevent the use of automobiles capable of a greater rate of speed than twenty miles an hour.

It provides that licenses be issued only to cars incapable of exceeding that speed limit, which, of course, means all cars. Any violation of the regulation is made a misdemeanor, punishable by a fine of $50 or ten days, or, like the signs on expectorating in trolley cars, with "both," at the discretion of the magistrate.

Whether as a joker or for serious purposes, the bill has been referred to the Committee on Agriculture, who, it is stated, will probably bury it for the session.

There is a general sentiment against the adoption of so drastic a measure, in spite of the fact that the bill is less stringent as regards punishment than the proposal of former Governor Murphy in his last message. He desired that the use of automobiles with a speed capacity of more than twenty miles an hour be punished by imprisonment for thirty days for each and every offence, without the option of a fine. It was Murphy's idea that a low gear is all that is necessary to make such a law practicable.

Connecticut to Increase Speed.

In the Connecticut Legislature, Mr. Smith, of Hartford, has introduced a bill increasing the present speed limits from 12 to 15 miles per hour in cities and boroughs, and from 15 to 20 miles outside thereof. In addition to the $200 fine or thirty days imprisonment now provided for, Mr. Smith would have forfeiture of license follow three convictions. Mr. Fosdick, of Lyn, also has introduced a bill which increases the speed limit to 20 miles in the country, but retains the 12 miles in cities' clause.

Saxe Supports the West Enders.

The eminently respectable West End Improvement Association of New York, or, at any rate, the professional reformers in the organization, are on the road to happiness. Senator Saxe has introduced into the legislature their measure permitting magistrates to impose a jail sentence of thirty days without the option of a fine for a first offence against the automobile law At present the limit of punishment is a fine of $100.

Congress Asked to Afford Relief.

On Monday Representative Goulden, of New York, introduced into the House of Representatives the amendment to the federal statutes fathered by the Automobile Club of America, which is designed to permit automobiles to go on and off ferry boats under their own power; it requires merely that there shall be no fires in such cars while the boat is in motion.

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The Laurels of the Carnival.

WORLD'S RECORDS ESTABLISHED

Date. Distance.	Driver.	Machine.	Time.	Miles Per Hour.
Jan. 24—One mile	A. C. McDonald	90 h. p. Napier	0:34 2-5	104.6
Jan. 24—Five miles	A. C. McDonald	90 h. p. Napier	3:17	91.4
Jan. 25—One mile, steam cars	Louis S. Ross	20 h. p. Ross Steamer	0:38	94.7
Jan. 30—One hundred miles	H. W. Fletcher	90 h. p. De Dietrich	1:18:24	78.7
Jan. 31—One kilometre, for steam cars	Louis S. Ross	20 h. p. Ross Steamer	0:24 1-5	112.5
Jan. 31—Ten miles	A. C. McDonald	90 h. p. Napier	6:15	96.0
Jan. 31—Twenty miles	A. C. McDonald	90 h. p. Napier	15.23	78.0
Jan. 31—Fifty miles	H. W. Fletcher	90 h. p. De Dietrich	38:58	92.5

THE VICTORS.

Date.	Race.	Winner.	Machine.	Time.	Average Per Mile.	Miles Per Hour.
Jan. 24	One kilometre, 851-1432 lbs.	Webb Jay	15 h. p. White Steamer	0:44 2-5	1:14	48.6
Jan. 24	Five miles, cars $650-$1000	Louis S. Ross	8 h. p. Stanley Steamer	6:42 3-5	1:28 2-5	40.7
Jan. 24	Five miles. cars $2751-$4000	Charles Soule	30 h. p. Pope-Toledo	5:18 2-5	1:02 3-5	57.5
Jan. 24	Five miles, cars $4000-$6000	Charles Soule	30 h. p. Pope-Toledo	5:17 3-5	1:03 4-5	56.6
Jan. 24	Five miles, Record Trials	A. C. McDonald	90 h. p. Napier	3:17	0:39 2-5	91.4
Jan. 24	Ten miles, Record Trials	M. G. Bernin	60 h. p. Renault	7:42	0:46 1-5	77.9
Jan. 24	Ten miles, cars $1001-$1800	H. P. Maxim	18 h. p. Columbia	14:12 3-5	1:25 1-5	42.2
Jan. 24	Five miles, Handicap (stock cars)	H. P. Maxim	18 h. p. Columbia	7:18 1-5	1:27 1-5	41.2
Jan. 25	One mile, time trials	H. L. Bowden	120 h. p. Mercedes	0:34 1-5	0:34 1-5	105.2
Jan. 25	One mile, Dewar Cup	Louis S. Ross	20 h. p. Ross Steamer	0:42	0:42	85.6
Jan. 25	One mile, R. C. Clowry Trophy	Louis S. Ross	20 h. p. Ross Steamer	0:57 2-5	0:57 2-5	62.7
Jan. 26	One mile, Amateur Corinthian Cup	Louis S. Ross	20 h. p. Ross Steamer	0:41 3-5	0:41 3-5	86.5
Jan. 26	One-kilometre, trial	H. L. Bowden	120 h. p. Mercedes	0:23 3-5	0:38	94.7
Jan. 26	One mile, cars 851-1432 lbs.	Webb Jay	15 h. p. White Steamer	0:51 4-5	0:51 4-5	69.4
Jan. 26	One mile, cars 1432-2204 lbs.	Louis S. Ross	20 h. p. Ross Steamer	0:41 3-5	0:41 3-5	86.5
Jan. 26	One kilom., H. L. Bowden Trophy	A. C. McDonald	90 h. p. Napier	0:27 3-5	0:44 2-5	81.0
Jan. 26	One kilometre, cars 1432-2204 lbs.	Louis S. Ross	20 h. p. Ross Steamer	0:29 2-5	0:47 1-5	76.0
Jan. 27	Fifty miles, Lozier Trophy	Walter Christie	60 h. p. Christie	1:11:22 2-5	1:25 1-5	42.2
Jan. 28	Ten miles, open	E. R. Thomas	90 h. p. Mercedes	6:31 4-5	0:39 3-5	92.0
Jan. 30	100 miles, W. K. Vanderbilt, jr., Cup	H. W. Fletcher	80 h. p. De Dietrich	1:18:24	47:0	78.7
Jan. 30	Five mile, Ormond Handicap	Paul Sartori	90 h. p. F. I. A. T.	3:57	0:47 2-5	75.9
Jan. 30	Five miles, Brokaw Trophy	E. R. Thomas	90 h. p. Mercedes	3:30 1-5	0:42	85.7
Jan. 31	Fifty mile Handicap, Burgoyne Cup	Paul Sartori	90 h. p. F. I. A. T.	40:20	0:48 2-5	74.3
Jan. 31	Twenty miles, E. R. Thomas Trophy	A. C. McDonald	90 h. p. Napier	15:23	0:46 3-5	78.0
Jan. 31	Ten miles, Major Miller Trophy	A. C. McDonald	90 h. p. Napier	6:15	0:37 1-5	96.0
Jan. 31	Ten miles, Handicap.	C. Canaut	45 h. p. De Dietrich	8:02 3-5	0:48 1-5	74.5
Jan. 31	One mile, Record Trial	H. L. Bowden	120 h. p. Mercedes	0:32 4-5	0:32 4-5	109.7
Jan. 31	One kilometre, Record Trial	A. C. McDonald	90 h. p. Napier	0:25 1-5	0:40 2-5	88.8

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Many Sensations Mark Florida Carnival

Marvelous Flights of Speed Shatter the Record Table, but Frost, Real and Figurative, Nips the Function—Disregard of Tides for the Sake of Hotel Keepers at the Bottom of Trouble.

Daytona, Jan. 27.—"Queered," that expressive vernacular, best sums up the Florida speed carnival during the week just ending. It is almost correct to say "ended," is there may be no racing to-morrow, the big one-hundred-mile race for the W. K. Vanderbilt, Jr., trophy, one of the star events that all who came wished to see, having been held over until Monday—or later, the time of its running seemingly dependent on the vagaries of winds and tides and the latest moment it is possible to hold the crowd, many of whom, however, are already taking their departure.

The past week has more than borne out what the Motor World alone has had the courage to point out from the beginning, that the "carnival," as now run, is merely or too largely a "hotel annex," the game being to attract the highly desirable automobile crowds to Ormond when boarders are comparatively few, and before the season has fairly opened, precisely the same as it was to bring them to Mt. Washington in the hotels in which the same men are interested when the season is ending, and between times sandwich them into the same controlled New York hotel.

Successful heretofore, the scheme this time has been somewhat overdone, the object so apparent that even the eyes of the easy-going automobilists have been opened wide, and "hotel keeper's game" has been about the mildest characterization heard about the corridors of the hotels or among the shivering occupants of the stands and along the wind-swept beach.

But out of the fiasco just drawing to a close good may come in the shape of a reconstructed Ormond-Daytona carnival, run by a set of capable officials who have no hotel or other private interests to serve, and to whom the promotion of a speed carnival will be, as it ought to be, purely and simply in the interests of a grand sport and held at the time best suited for that sport, and not at the time best suited for private and already plethoric pocketbooks.

To those in the know, who stood and shivered the past week, the query often heard issuing from the chattering lips of the uninitiated as to why the meet was not held a few weeks later, provoked smiles of pity—or derision. Even the racing officials and press men, those hardy, cheery souls who travelled up the long beach in the teeth of the icy winds at 6:30 in the morning, only to find that "conditions rendered the running of the scheduled events impossible until afternoon," voiced their feelings in that lusty chorus:

"Who brought us here?"

"Morgan."

"What are we?"

"S U C K E R S!' '

"Bum-ta-ra-rum-bum-bum!"

Though given good-naturedly, this oft repeated cry had more than a grain of truth in it.

And the pity of it all! That the magnificent course, without doubt the finest speeding ground in the world, was not used at a season when the Florida days are at their best and during a week when favoring tides permitted the races to commence late in the morning or in the early hours of the afternoon, was a thought uppermost in all "hotel-disinterested" ones present.

To the newspaper men and representatives of other journals, who, to use a vulgarism, "pushed" the Ormond game, too much blame should not be given. They were merely carrying out their end of a bargain. They and their wives were fed and lodged free gratis by the generous Ormond hotels, and—what else could they be expected to do?

As the week dragged by and the temper of the majority crystallized into a sentiment of indignation against the lack of management, with suggestions as to the conduct of future meetings, the present promoters, foxy as they are, decided to forestall any action by hastily calling a meeting of themselves, a few stray newspaper men, photographers and others "interested." The necessity of organizing was dwelt upon, after which a resolution was sprung by S. A. Miles, calling for the election of a committee of nine (five to be residents of Ormond) to name a board of directors, nominate officers, arrange for membership, and a general meeting to be held not later than February, 1906. This was adopted, the nine chosen being James Carnell, John H. Price, J. A. Bostrom, Dr. William Miller and W. S. Kenny, of Ormond, and W. J. Morgan, S. A. Miles, Frank X. Mudd and H. L. Bowden. That the "Ormond Racing Association," as the body chose to call themselves, intend to take care of the hotel end of the game was proved by the selection as president of John D. Price, of Anderson & Price, proprietors of the Ormond Hotel; W. S. Kenny, secretary, and W. J. Morgan, general manager.

It was afterwards reported that H. L. Bowden had disclaimed any connection with the movement, stating that he was not present, that his sympathies were entirely with

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GENERAL VIEW OF BEACH AND SPECTATORS AT DAYTONA END.

the A. A. A., and that his name had been used without his knowledge or permission. It was subsequently developed that the plans of the "organization" reached beyond attempting to control the Ormond meeting, embracing in scope the creation of a race circuit in the North under rules other than the A. A. A., presumably under the auspices of an organization composed chiefly of persons who do not own automobiles, and with which the new "organization" is closely associated. One of the wild rumors growing out of the rumpus had it that the Ormond Hotel Racing Association, as the new body was promptly dubbed, would form an amance with the A. L. A. M. This, of course, is wholly improbable, but shows a state of mind existing.

While all this was going on, still another racing club was formed, announced as friendly to the Florida East Coast Automobile Racing Association, and to be called the Sea Breeze Racing Association. From the name selected, it is probable this last body will represent the claims of the Sea Breeze and Daytona people, which have so far been denied recognition, though they are really nearer the best parts of the course, their claims being drowned in the noise of the professional and newspaper tom-tom beating for Ormond.

The Sea Breeze Association played a good card by voting that they recognize only the A. A. A. as in control of the sport. The officers elected were: R. J. Allen, president; John Van Nostrand, vice-president; C. E. Langley, secretary; Ray Turner, treasurer, and A. T. Post, S. B. Stevens, A. W. Church, E. S. Partridge and C. H. Fuller, directors.

Despite the amount of organizing going on, inquiry among the real racing car owners and those who have the true interests of the sport at heart developed a strong feeling of loyalty to the A. A. A. as the controlling body.

This feeling found utterance in a breakfast given by W. C. Temple, chairman of the A. A. A., and was voiced by E. R. Thomas, William Wallace, H. L. Bowden, E. M. Steca, James L. Breese, Walter Christie and others.

The suggestion was made that in future the A. A. A., acting for the Florida E. C. A. R. A., receive all entries, arrange the programme of events, and set the date of the meet, in this last being assisted by the local club (the F. E. C. A. R. A.), which could be drawn upon for precise information with regard to time of tides, etc. A further suggestion was put forward that all events for stock cars, or anything but stripped or racing cars, be eliminated; that the schedule consist of three classes (A, B, C), of four events each, viz., kilometre, mile, five miles and ten miles. This, it was contended, was programme enough, that such a schedule could be run off promptly and on time, and that visitors come to the races to see racing cars, and not touring cars, the latter a sight familiar anywhere. This suggestion has many strong advocates, among them W. C. Temple, who is heartily in favor of it.

Another subject attracting comment of any but a favorable kind, and which is due to receive attention in the near future, was the palpable attempt to secure cheap advertising by the donating of cups by the agents of a particular car, open only to cars of that brand. Not a vestige of sportsmanship appears in it, and it was commented upon as strongly savoring of the methods of Baxter street.

In refreshing contrast was the Lozier trophy, offered for fifty miles and open to all cars of American manufacture. It seems probable that the plan of requiring prospective donors to submit the proposed conditions to the racing committee of the governing body will be followed, their decision to be final, for cups not accepted by them to be denied recognition, and anyone competing for them disqualified. This is, in substance,

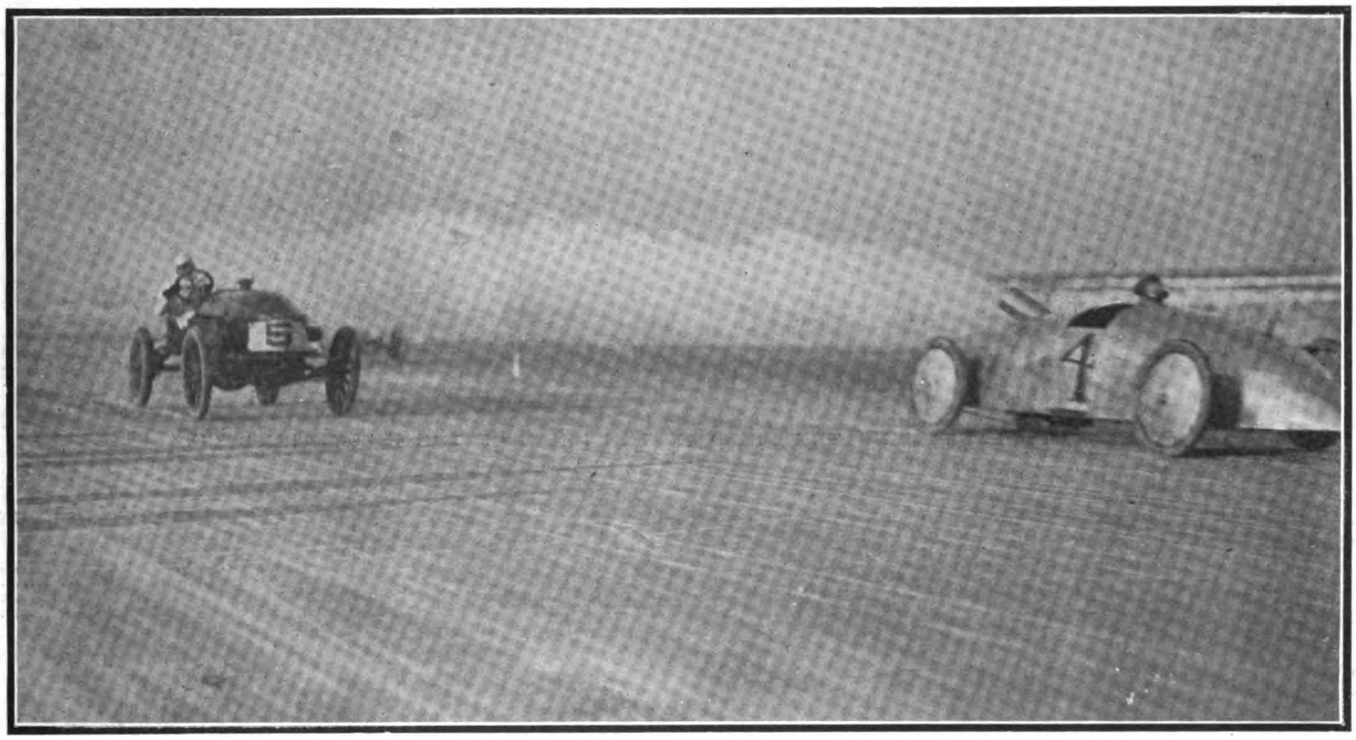
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following the stand taken by the Automobile Club of France, when a commission is appointed to whom all proffered trophies are referred.

The general situation was intensified to-night, when it became known that President Harlan W. Whipple, W. C. Temple, chairman of the racing committee, and Directors William Wallace, W. K. Vanderbilt, Jr., and H. L. Bowden had all resigned.

Mr. Whipple, it is known, was not anxious for the re-election accorded him this year, and it cannot be said that his resignation is an entire surprise to his friends. He is not well, and it is said his action is due chiefly to a threatened attack of nervous prostration, coupled, doubtless, with the state of affairs that has existed here. Mr. Temple resigned in order that Mr. Whipple's successor might have a free rein. It is too early to guess who will succeed Whipple, but it is known that previous to the recent annual election Eliot C. Lee, president of the Massachusetts A. C., was prominently mentioned, and that he would prove a splendid man for the office is not to be doubted. Regarding the chairmanship of the racing committee, an observant individual remarked only yesterday that A. L. Riker is the sort of "timber" the A. A. A. should seek to make the most of.

January 26th, the Day of Ross's Solitary Defeat.



McDONALD OVERHAULING ROSS IN THE RACE FOR THE BOWDEN TROPHY—THE ONLY EVENT IN WHICH THE AMERICAN WAS DEFEATED.

Daytona, Jan. 26.—To-day proved another field day for Louis Ross and his little teakettle steamer, the combination annexing three victories, one second and in the final for the Corinthian Cup and the mile open for Class A cars travelling the route in 41 3-5 seconds.

Ross's only defeat was in the final for the Bowden trophy at one kilometre, when A. C. MacDonald, in his 90 horsepower Napier, took him into camp by a few yards, though to do it he had to break the coasting competition record for the distance, setting up the new figures of 27 3-5 seconds. Even at that, there were heard many expressions favoring the running over of the event on the ground that Ross had been crowded, but the Newton man declined to protest, accepting his solitary defeat with placidity, and afterward, when questioned, shrugging his shoulders and smilingly remarking that he preferred to say nothing. This race furnished one of the most exciting finishes ever seen anywhere. There were four starters, Ross, MacDonald in the Napier, William Wallace in the 90 horsepower F. I. A. T. and S. B. Stevens in his 90 horsepower Mercedes. The men got off well together, the Napier slightly leading at the 100-yard mark. Ross then went to the front, and led until about 200 yards from the finish, when the Napier came up with a tremendous burst of speed, front wheels quivering like a butterfly in flight, flashed by the scurrying steamer, which was far to the outside of the course, and seemed to swerve for a brief fraction of a second, then MacDonald thundered over the line a winner in the record breaking flight of 27 3-5 seconds.

The feature of to-day; in fact, the chief feature of the carnival so far, has been the struggles between Ross and MacDonald. Every time they met it has been a battle royal, and, though the steamer has been the victor in every race except the one just described, each time the thundering green monster has been hard at its heels, like a grim British bulldog, refusing to be shaken off and relentlessly pursuing its fast flying prey.

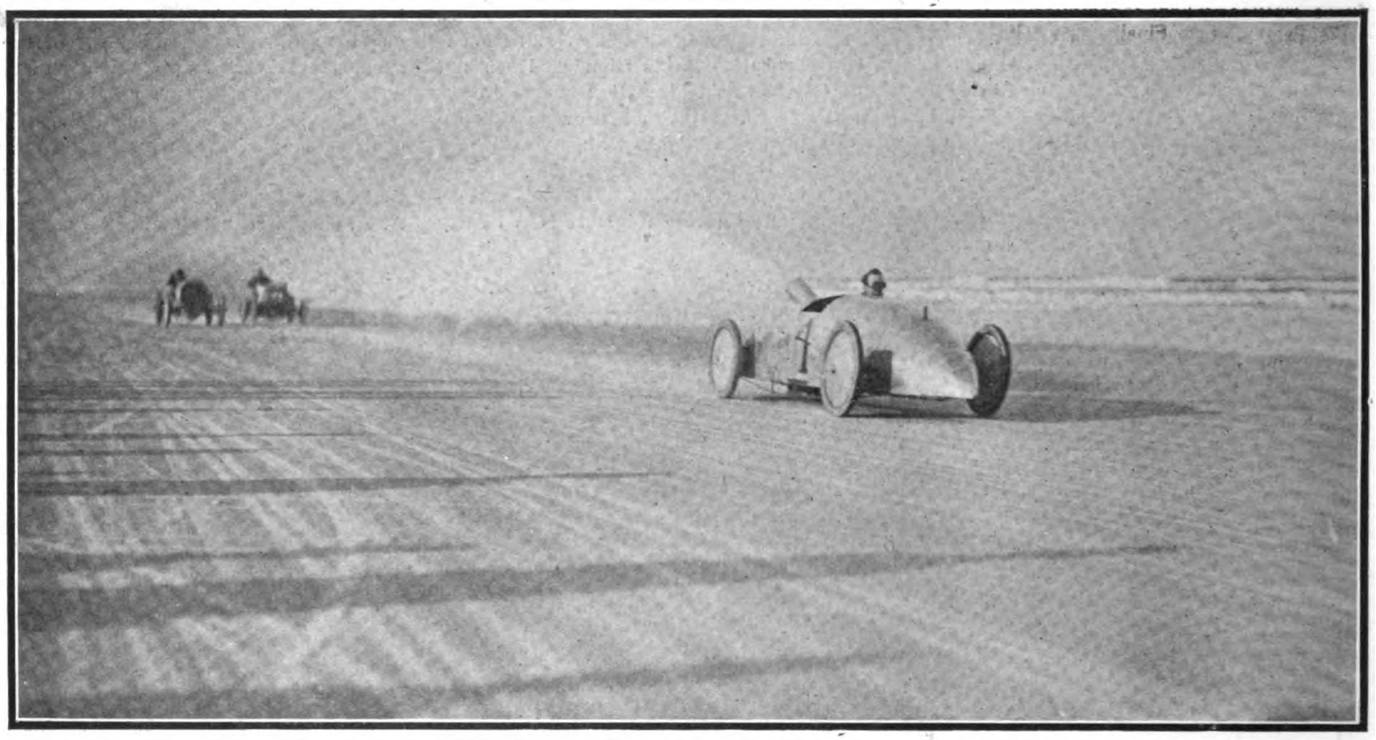
Aside from Ross and his steamer, the honors of the meet so far—and they are not likely to be snatched from him—fall to the nervy MacDonald and his speedy car. With the official mile record of 34 4-5 to his credit, coupled with his annexing of the kilometre competitive record to-day, his uniformly close finishes in every event the plucky Scotchman has proved himself a star of the first magnitude.

W. K. Vanderbilt, Jr., again disappointed to-day by his poor showing, finishing third in the first heat of the kilometre race for the Bowden trophy, second in the first heat of the kilometre event for cars weighing from 1,432 to 2,204 pounds, while in the final of this event he stripped his fourth speed gear and retired. Previously in the kilometre time trials the best he could do was 28 3-5 seconds.

His lack of success has been ascribed to many reasons, some contending that he was carrying too large a sprocket, but, with Mr. Vanderbilt's racing experience and knowledge of automobiles, this view is hardly tenable.

Others have it that the Croker accident made him disinclined to figure too prominently in this year's programme, while still another opinion is that his machine was simply not fast enough, and that he did with it all that it could do. His showing seems inexplicable in the light of the fact that on Tuesday Mr. H. L. Bowden openly predicted

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ROSS SPREADEAGLING THE FIELD IN THE FINAL OF THE KILOMETRE RACE.

that Mr. Vanderbilt would again sweep the boards and set up new records that would make the old ones look "like a bad thirty cents." However it may be, to-night Mr. Vanderbilt hied himself to Palm Beach, and this week's events will know him no more.

Among the developments of the day was the announcement made to-night by Mrs. Howard Gould that it was her intention to offer for next year a $10,000 cup for a 100-mile race, open only for gentlemen drivers and for machines that are adaptable for touring purposes.

This is chiefly interesting as voicing the feeling of resentment and disgust among the foreign machine contingent over the victories of the Ross "freak" steamer, which, they angrily declare, should be barred from participating or thrown into the sea.

That the victories of the little American steamer have caused much resentment to a certain class there is no room for doubt.

Still another sample of blundering management occurred first thing this morning. The day's events were scheduled to start at 7 o'clock, and once again the shivering officials assembled, three competitors, among them Mr. Vanderbilt, showing up, only to find what ought to have been known, that the tide was unfavorable, and so the races were again called off until the afternoon.

Last night was said to be the coldest here for ten years. Fires were lighted under the orange trees, and the visitors from the North were booming New York and a steam heated flat as the only real summer resort. It was so cold that the water in the radiators of several machines froze, and to those who trudged or rode to the beach in the icy blasts of the morning the folly of trying to hold the meet at this season of the year was vividly apparent.

At 2:30 in the afternoon, the time at which the races were again called, the tide was still high, and the wind blew acros the sandy waste in chilling blasts. Another long delay for "more favorable conditions."

Interest was centred in the kilometre record trials, the fastest time of which was made by MacDonald and his Napier in 23 seconds flat. Considering conditions, the beach in bad state, with many ridges, this time compares favorably with the record of 21 2-5 seconds made by Baras at Ostend, Belgium, with a gale of wind of fifty miles an hour at his back. There was general disappointment when it became known that the Ford racer, which was known to be very fast, and which, it was expected, would try for the kilometre record, had sustained an accident and would not appear.

KILOMETRE TRIALS.

W. K. Vanderbilt, jr., 90 h. p. Mercedes.... 0:28⅘
E. R. Thomas, 90 h. p. Mercedes..... 0:23⅘
Paul Sartori, 90 h. p. F. I. A. T..... 0:28⅘
C. De Pius, 80 h. p. Pipe..... 0:32⅘
S. B. Stevens, 90 h. p. Mercedes..... 0:26⅘
Webb Jay, 15 h. p. White steamer..... 0:32⅘
Louis S. Ross, 20 h. p. Ross steamer..... 0:24⅕
H. L. Bowden, 20 h. p. Mercedes..... 0:23⅘

ONE MILE (AMATEUR)—FOR CORINTHIAN CUP.

Final Heat.

Louis S. Ross, 20 h. p. Ross steamer..... 1
S. B. Stevens, 90 h. p. Mercedes..... 2
W. J. Wallace, 90 h. p. F. I. A. T..... 3
Time—Ross, 0:41⅘; Stevens, 0:46⅘; Wallace, 0:47⅘.

ONE MILE—FOR VEHICLES WEIGHING 851 TO 1,432 POUNDS.

Webb Jay, 15 h. p. White steamer..... 1
Guy Vaughn, 40 h. p. Decauville..... 2
Time—Jay, 0:51⅘; Vaughn, 0:54⅘.

ONE MILE—FOR VEHICLES WEIGHING 1,432 TO 2,204 POUNDS.

Louis S. Ross, 20 h. p. Ross steamer..... 1
S. B. Stevens, 90 h. p. Mercedes..... 2
W. J. Wallace, 90 h. p. F. I. A. T..... 3
Paul Sartori, 90 h. p. F. I. A. T..... 4
Time—Ross, 0:41⅘; Stevens, 0:47⅘.

ONE KILOMETRE—FOR H. L. BOWDEN TROPHY.

First Heat.

Louis S. Ross, 20 h. p. Ross steamer..... 1
A. C. MacDonald, 90 h. p. Napier..... 2
W. K. Vanderbilt, jr., 90 h. p. Mercedes..... 3
Time—Ross, 0:25⅘; MacDonald, 0:29⅘; Vanderbilt, 0:32⅘.

Second Heat.

W. J. Wallace, 90 h. p. F. I. A. T..... 1
E. Fredericks, 90 h. p. Mercedes..... 2
Time—Wallace, 0:32⅘; Fredericks, 0:34⅘.

Third Heat.

S. B. Stevens, 90 h. p. Mercedes..... 1
Paul Sartori, 90 h. p. F. I. A. T..... 2
Time—Stevens, 0:31⅘; Sartori, 0:33.

Final Heat.

A. C. MacDonald 1
Louis S. Ross..... 2
S. B. Stevens..... 3
W. J. Wallace..... 4
Time—MacDonald, 0:27⅘; Ross, 0:28⅘; Stevens, 0:28⅘; Wallace, 0:30.

ONE KILOMETRE—FOR VEHICLES WEIGHING 1,432 TO 2,204 POUNDS.

First Heat.

A. C. MacDonald, 90 h. p. Napier..... 1
W. K. Vanderbilt, jr., 90 h. p. Mercedes..... 2
E. R. Thomas, 90 h. p. Mercedes..... 3
Time—MacDonald, 0:27⅘; Vanderbilt, 0:30⅘; Thomas, 0:30⅘.

Second Heat.

Louis S. Ross, 20 h. p. Ross steamer..... 1
W. J. Wallace, 90 h. p. F. I. A. T..... 2
C. De Pius, 80 h. p. Pipe..... 3
Time—Ross, 0:28; Wallace, 0:33⅘; De Pius, 0:38⅘.

Third Heat.

S. B. Stevens, 90 h. p. Mercedes..... 1
Paul Sartori, 90 h. p. F. I. A. T..... 2
Time—Stevens, 0:30⅘; Sartori, 0:32⅘.

Final Heat.

Louis S. Ross..... 1
A. C. MacDonald..... 2
S. B. Stevens..... 3
W. K. Vanderbilt, jr..... 0
Time—Ross, 0:29⅘; MacDonald, 0:29⅘; Stevens, 0:31⅘.

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CHRISTIE WINS AT LAST

His Perseverance Finally Earns Its Reward in a Race Replete with Mishaps.

Daytona, Jan. 27.—When the bulletin was posted last night, and it was seen that the day's events were again scheduled to start at 7 o'clock this morning, the universal comment was either "they won't catch me again," from those who had gotten up in the "cold gray dawn" of yesterday only to have their trouble for their pains, or "not for mine," from the remainder who had learned from others.

The consequence was that when the fifty-mile race for the Lozier trophy, open to all American cars, was called, there was scant attendance. Three contenders, Walter Christie, in his 60 H. P. direct drive car of his own manufacture; Barney Oldfield, in the 60 H. P. Peerless Green Dragon, and A. C. Webb, in the 75 H. P. Pope-Toledo, lined up. The course was twelve and one-half miles in length, between the sixteen-mile post at Ormond and the three-mile post south of Daytona, the beach in no condition, or in such condition that the last five miles were practically run in the surf and wet sand. The cars started at Ormond and had the turns to make, controls of two minutes being established.

Oldfield, who was first to get away, turned at the wrong mark ten miles out, came back, was restarted and then wrenched a tire off one of the forward wheels after completing his first circuit, continued for about three miles and then withdrew.

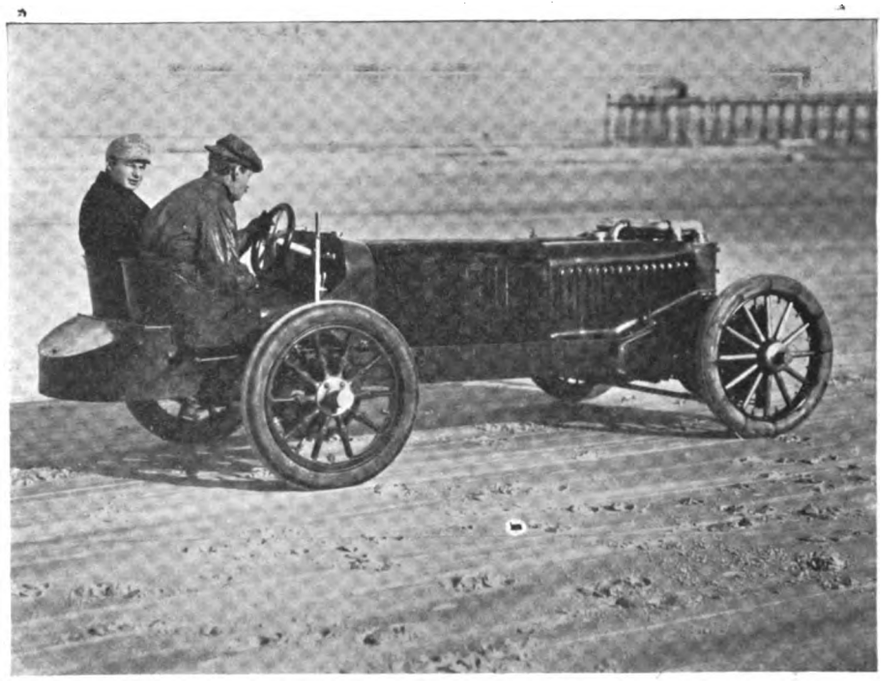
Webb, after going to the ten-mile post in the lead, got into a gully, broke a commutator spring and he was out of it.

Christie, on the first round, broke a terminal, could not locate it for some time, then when he did repair it, it short-circuited, necessitating another delay, the total of which was thirty-three minutes. However, he kept on and was the only one to finish. His time was 1 hour 11 minutes 20 1-5 seconds, the first 25 miles being done in 50 minutes 34 seconds elapsed time, and the second 25 miles in 26 minutes 28 2-5 seconds elapsed time. The total of six minutes spent in controls was deducted.

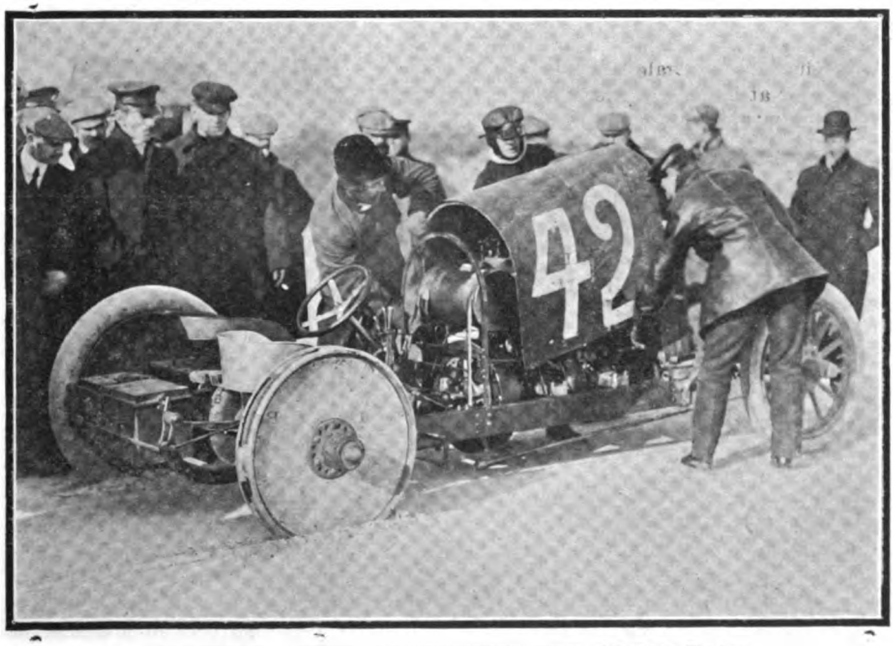
After this "race" further events were postponed until 2:30 p. m. At that hour the waves were lashing the lumpy and dangerous course with wild fury, the day bleak and drear as a day in December, and the sun, shining fitfully one minute, was obscured the next, and matters were at a standstill, the crowd, such as were fortunate enough to hold tickets or who had nerve enough to go in on their face, piling into the clubhouse, while the less fortunate spectators lighted fires along the shores in their effort to keep warm.

The afternoon dragged along, and the monotony of the hours was relieved only when the agent of one and the owner of another imported car got into a wrangle, and their chauffeurs drove an impromptu race for what was announced as a bet for about a million dollars a side—or something like it.

Thus ended the chapter of unlucky Friday, and the announcement was made that the hundred-mile race for the W. K. Vanderbilt, Jr., trophy would be held over until Monday.



WALTER CHRISTIE (AT WHEEL) IN HIS DIRECT-DRIVE CAR.



OLDFIELD AFTER ABANDONING THE 50-MILE RACE.

FIFTY MILES (AMERICAN CARS)—FOR LOZIER TROPHY.

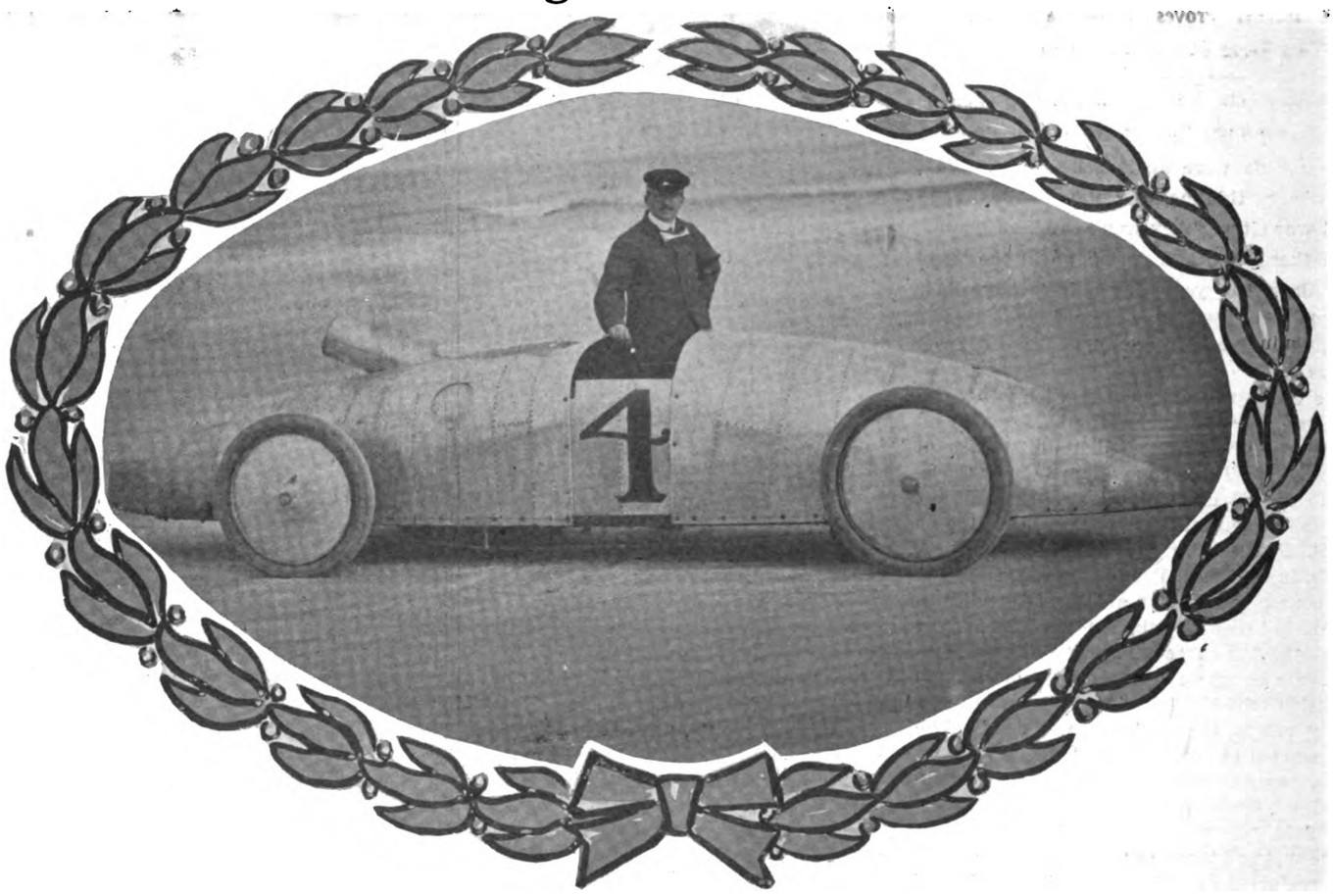
Walter Christie, 60 h. p. Christie..... 1
A. C. Webb, 75 h. p. Pope-Toledo..... 0
Barney Oldfield, 60 h. p. Peerless..... 0
Time—Christie, 1:11:20¼.

The Chicago Automobile Club should certainly bestow a medal or other suitable token of appreciation to Vehicle Inspector Patrick Ward, of that city, and his portrait should be hung in the Hall of Fame. From the City Hall last week came a word of defense for the much abused automobilist.

"An investigation of all recent complaints," said Inspector Ward, "has shown that the automobile is more often sinned again than sinning. In nine cases out of ten examination has shown that, instead of the automobile running down a vehicle while going at top speed, the vehicle has in reality run down the automobile. Most complainants believe any one who owns an automobile must be well provided with this world's goods, and consequently well able to pay any damage claim that is presented, no matter who is at fault."

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The "Kings" of the Carnival.





LOUIS S. ROSS, NEWTON, MASS.
A. C. McDONALD, LONDON, ENGLAND.

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THOMAS TAKES A RECORD

New York Banker Proves Himself a Fearless Driver—Two Races Run for Advertising Only.

Daytona, Jan. 28.—To the general surprise racing was resumed this morning at about 8 o'clock, the first event being the ten-mile race restricted to German cars, for a trophy offered by the American agents.

The result was a splendid record-breaking performance by E. R. Thomas, who fairly ran away from his field, covering the ten miles in 6 minutes 31 4-5 seconds, a cut of 18 1-5 seconds from the mark of 6:50, established by W. K. Vanderbilt, Jr., last year. In this race Mr. Thomas proved his right to class with drivers of the first rank. His brilliant performances of the week are all the more remarkable when it is considered that they were his first appearances in public, and that they far excelled anything done by his professional chauffeur.

In the line-up four contenders appeared. They were E. R. Thomas, in his 90 H. P.; E. Frederick, in B. M. Shanley's 90 H. P. (the machine which, then owned and driven by W. K. Vanderbilt, Jr., made the record of 6 minutes 50 seconds last year); J. L. Breese, in his 35 H. P., and S. B. Stevens, in his 90 H. P.

The course was in the best condition it has been during the meet, and the sun fairly warm, tempered the morning air to a comfortable degree. The course was from Ormond to Daytona, and the wind, a moderate breeze, was from the northeast.

Jumping away at the pistol shot, Mr. Thomas directed his huge catapult in a course skirting the water's edge, where he seemed to fairly skim along the shore, accelerating every second. flew by the Clarendon Hotel like a flash, and was across the tape at the finish like a whirlwind.

Even before the time was announced it was known that the old record had gone by the board, and when the figures were given, loud were the praises accorded "the human telegraph pole," as the lengthy driver has been called.

One minute twelve and two-fifths seconds later the Shanley machine crossed the line, the time—7:44 1-5—being nearly a minute slower than Vanderbilt got out of the same car last year.

Breese came trailing across the line about two miles behind the second car, while Stevens developed an overheated cylinder and did not finish.

The next race was of the same kind, ten miles, for Italian cars only, for a trophy offered by the American agents.

Alfred G. Vanderbilt's, much raced but yet-to-win, 90 H. P., with Sartori driving, and William Wallace, with his 90 H. P., the only two racing cars of the kind in this vicinity, and perforce the only two entries, appeared.

Wallace won by a mile, in 6:54 2-5.

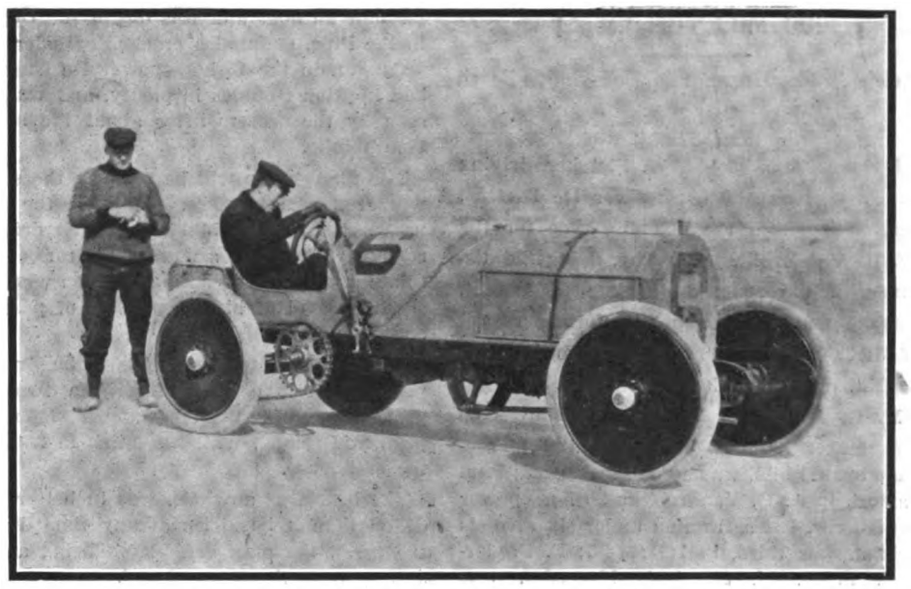
Evidently realizing at last that time and tide wait for no man, it was decided to take advantage of the previling favorable conditions, and three heats of the Ormond Derby were run off before the oncoming waters claimed their own.

In the first heat A. C. MacDonald won with ridiculous ease, in 7 minutes 6 seconds; C. Duplus, in an 80 H. P. Belgian machine, second, in 7:40 3-5; Bernin, in W. Gould Brokaw's 60 H. P. Renault, third, in 7:59 2-5.

Second heat—E. R. Thomas's 90 H. P. Mercedes, first, in 7:10 3-5. E. Fredericks, in the Shanley 90 H. P. Mercedes, was distanced.

Third heat—Won by J. L. Breese, in his 35 H. P. Mercedes, in 10:29 2-5. Wallace, in his 90 H. P. Italian machine, did not finish.

Though racing was expected to be resumed at 4 o'clock, the narrow beach made it impossible, and a big Jacksonville excursion crowd, which had come over for the events of the afternoon, had to go back home disappointed—unless they preferred to put up at the Ormond hotels until Monday, when the Vanderbilt 100-mile race is announced.



E. R. THOMAS, WHO PROVED A BETTER DRIVER THAN HIS CHAUFFEUR.

TEN MILES (F. I. A. T. CARS)—FOR HOLLENDER AND TANGEMAN TROPHY.

William Wallce, 90 h. p..... 1
Paul Sartori, 90 h. p..... 2
Time—Wallace, 6:54⅘; Sartori mile behind at finish.

TEN MILES (MERCEDES CARS)—FOR ALLEN HALLE TROPHY.

E. R. Thomas, 90 h. p..... 1
E. Fredericks, 90 h. p..... 2
James Breese, 40 h. p..... 3
S. B. Stevens, 90 h. p..... 0. 0
Time—Thomas, 6:31⅘; Fredericks, 7:44⅘; Breese, 9:25⅘.

TEN-MILE DERBY—FOR MILLER TROPHY.

First Heat.

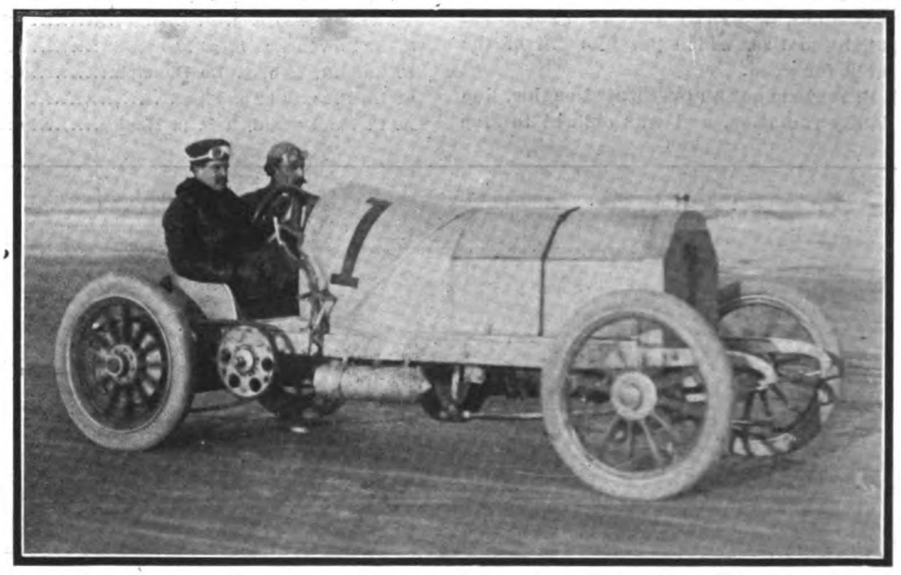
A. C. MacDonald, 90 h. p. Napier..... 1
C. Duplus, 80 h. p. Pipe..... 2
M. G. Bernin, 60 h. p. Renault..... 3
Time—MacDonald, 7:06; Duplus, 7:40⅘; Bernin, 7:59⅘.

Second Heat.

E. R. Thomas, 90 h. p. Mercedes..... 1
E. Fredericks, 90 h. p. Mercedes..... 0
Time—Thomas, 7:10⅘.

Third Heat.

James L. Breese, 40 h. p. Mercedes..... 1
William Wallace, 90 h. p. F. I. A. T..... 0
Time—Breese, 10:29⅘.



W. K. VANDERBILT, JR., WHOSE STAR WAS IN THE DESCENDENCY.

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100 MILES IN 1:18:24

Fletcher's Phenomenal Flight on Florida Beach —Averages 76 1-2 Miles per Hour.

Daytona, Jan. 30.—H. W. Fletcher, driving O. F. Thomas's 80 horsepower De Dietrich car, to-day won the 100-mile race for the W. K. Vanderbilt, jr., trophy, doing the distance in the remarkable time of 1:18:24, smashing to smithereens the former record of 5:52:09, made three years ago by Em. Voight, on Long Island.

M. G. Bernin, in W. Gould Brokaw's 60 horsepower Renault, 3 minutes and 14 seconds behind him, was second in 1:21:38; Paul Sartori, in A. G. Vanderbilt's 90 horsepower Italian car, but a fraction under six seconds behind, was third, in 1:21:44 4-5; E. Fredericks, in B. M. Shanley's Mercedes, was fourth, in 1:24:28 4-5; Walter Christie, driving his 60 horsepower Christie racer, and the only American car in the race, finished fifth, in 1:27:16 4-5, and William Wallon, in his 90 horsepower Italian machine, was the last of the survivors, in 1:29:20.

There were ten starters in all, including, besides the six survivors, A. C. MacDonald, in his 90 horsepower Napier; C. Duplus, in an 80 horsepower Pipe; S. B. Stevens, in his 90 horsepower Mercedes, and C. Canaut, in a 45 horsepower De Dietrich.

The winner was obliged to make seven turns, and, despite the time lost, made the remarkable average speed of practically 47 seconds to the mile for the entire distance.

The result of the race was a big surprise. It had been confidently expected that it would fall to MacDonald and his Napier, a big favorite, but, despite the fact that the clever Scotch driver made the best time for the first four miles, doing them in 3:42 2-5, he developed ignition troubles before sixteen miles had been covered, losing twenty minutes or more in this way, and though he made up all this and more, running second at fifty miles, he shortly afterward sustained a punctured tire, which put him out of the running for good.

S. B. Stevens got an overheated engine, due to faulty radiation, and was obliged to stop for half an hour and was out of it. Deplus, in the Pipe, suffered a cracked cylinder.

Canaut, in the 45 horsepower De Dietrich, had ingition troubles in plenty, and was not seen by the scorers after about the seventeenth mile.

The finishes, as will be seen by the score, were remarkably close. Fletcher, the winner, won by truly blind, daredevil driving, rushing headlong around the turns and thinking only of overtaking the men who had started ahead of him, regardless of possible consequences.

The start was made at 9:53, at the six-mile post, the course being from the two-mile post, below Daytona, to the sixteen-mile post, at Ormond, with the finish in front of the clubhouse.

The beach, as a whole, was in better condition than it has been at any time during the meet, the only bad places being a few soft spots at the Ormond end.

The weather was wellnigh perfect, the air balmy and springlike, while a gentle breeze just combed the tops of the waves with a light touch.

The event, considered from a spectator's point of view by long odds the most interesting of the speed carnival, was witnessed by the smallest crowd yet seen, the majority of the visitors, tired of long delays and postponements, having already taken their departure. But those who could stay were rewarded by seeing the fastest machines in the world, turning and returning at full speeds, and this prospect sent pleasurable thrills of anticipation coursing up and down many spines.

As is known, considerable pressure was brought to bear on the donor of the cup to neutralize the turns, but this he firmly declined to do, maintaining, and rightly, that his trophy was for a race of one hundred miles, not for ten or fifteen mile spurts up and down the beach. Happily the contest was without personal accidents of any kind. Of the contestants, Fletcher and Fredericks seemed to get around the turns quickest, while Wallace made the shortest swing.

Two other races were run off to-day. E. R. Thomas won the final for the Brokaw trophy, while Sartori won a handicap race of five miles, Mr. Thomas making a good run for second from scratch. The summaries:

FIVE-MILE OPEN—FOR BROKAW TROPHY.

First Heat.

E. R. Thomas, 90 h. p. Mercedes..... 1
William Wallace, 90 h. p. F. I. A. T 2
S. B. Stevens, 90 h. p. Mercedes..... 3
G. H. Flinn, 60 h. p. Mercedes..... 0
Time—Thomas, 3:23⅘; Wallace, 3:38⅘; Stevens, 3:47⅘.

Second Heat.

Paul Sartori, 90 h. p. F. I. A. T..... 1
Walter Christie, 60 h. p. Christie..... 2
A. C. MacDonald, 90 h. p. Napier..... 0
Time—Sartori, 3:58; Christie, 4:08.

Final Heat.

E. R. Thomas..... 1
William Wallace..... 2
Paul Sartori..... 3
Time—Thomas, 3:30⅘; Wallace, 3:46; Sartori, 4:15.

FIVE-MILE ORMOND HANDICAP.

Paul Sartori, 90 h. p. F. I. A. T. (0:34)..... 1
E. R. Thomas, 90 h. p. Mercedes (scratch)..... 2
William Wallace, 90 h. p. F. I. A. T. (0:19)..... 3
Time—Sartori, 3:57; Thomas, 4:02⅘; Wallace, 4:04⅘.

The order of the finish, with times taken each time past the scorers' stand, in the Vanderbilt trophy race at 100 miles, follows:

Driver and car.	16 Miles. M.S.	32 Miles. M.S.	44 Miles. M.S.	60 Miles. M.S.	72 Miles. M.S.	88 Miles. H.M.S.	Finish. H.M.S.
H. W. Fletcher, 80 h. p. De Dietrich.....	0:13:25	25:42⅘	35:12⅛	47:40	57:02⅛	1:09:34	1:18:24
M. G. Bernin, 60 h. p. Renault.....	0:14:01	26:58⅘	36:49⅘	49:45⅘	59:33⅛	1:12:27⅘	1:21:38
Paul Sartori, 90 h. p. F. I. A. T.....	0:13:50	26:39⅛	36:40⅘	49:32⅘	59:18⅘	1:12:18⅘	1:21:44⅛
E. Frederick, 90 h. p. Mercedes.....	0:13:49⅛	26:48⅘	36:42⅘	52:00	62:34⅘	1:15:03⅛	1:24:28⅘
W. Christie, 60 h. p. Christie.....	0:14:56	29:02	39:38½	53:01	63:53⅛	1:15:34	1:27:16⅘
W. Wallace, 90 h. p. F. I. A. T.....	0:13:47	26:23	36:19⅘	48:39	58:01	1:14:51	1:29:20
S. B. Stevens, 90 h. p. Mercedes.....	1:14:48	Called off.					
C. Canaut, 45 h. p. De Dietrich.....	0:15:53	30:47	42:51	57:05	1:20:36	Called off.	
C. De Plus, 80 h. p. Pipe.....	0:14:35	27:19	38:29	Out.			
A. C. MacDonald, 90 h. p. Napier.....	0:15:00	26:26	35:32⅛	Out.			



"IN MEMORIAM."

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RECORD-BREAKING WIND-UP

New Figures Created in Five of Seven Events —Bowden Goes a Mile in 32 4.5 s.

Daytona, Jan. 31.—Only the enthusiastically faithful and those whose duties required them to be faithful remained to witness this the "grand finale" of the speed carnival, and they were well rewarded. It was a day to be remembered. It wiped the name Vanderbilt off the record slate, although A. G. Vanderbilt's "man," Paul Sartori, finally did something to justify his wages. He plucked two of the records that fell like autumn leaves.

In five of seven events new figures were created, and one of them—a mile in 32 4-5 seconds, by H. L. Bowden, in his big 120 horsepower Mercedes—brings the mooted two miles per minute in plain sight. Of course, Bowden's car is above the regulation weight, and his time may not be generally accepted as a record, but that will scarcely minimise the merit of his almost incomprehensible flight. Think of it! One hundred and sixty feet per second—almost while the heart throbs once. It is at the rate of 109 7-10 miles per hour.

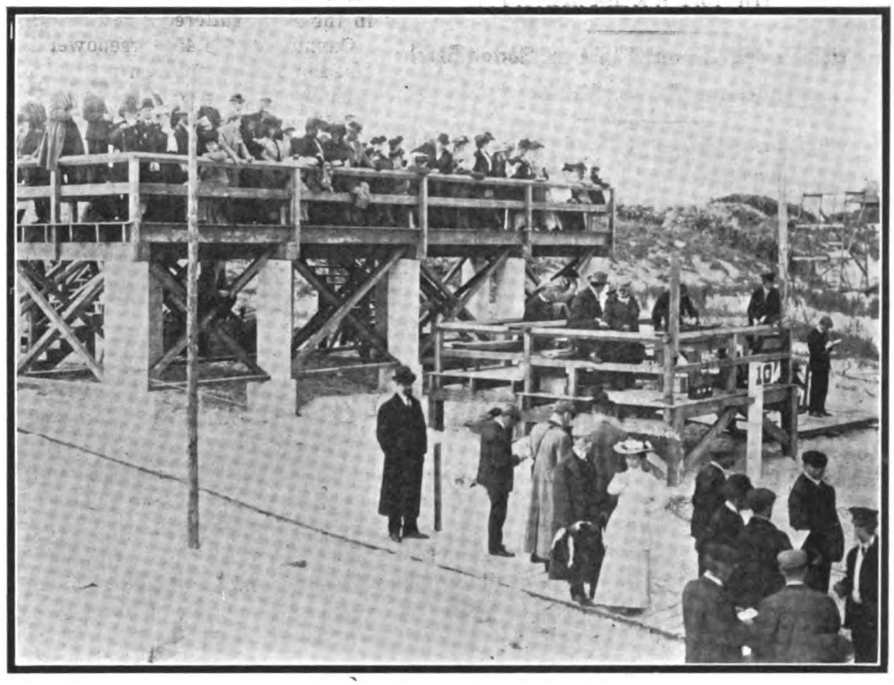
The other records established were: Ten miles, A. C. MacDonald, 90 horsepower Napier, 6 min. 15 sec.; twenty miles, A. C. MacDonald, 90 horsepower Napier, 15 min. 23 sec.; fifty miles, H. W. Fletcher, 80 horsepower De Dietrich, 38 min. 58 sec. The last three records were made in competition from standing start, and all were created on this (the Daytona) end of the beach. The course was in good condition, although not at its best, and the air was springlike.

The competitive events of the day were the fifty-mile handicap for the Burgoyne Cup, twenty-mile open for the E. R. Thomas trophy, ten-mile final for the Major C. J. S. Miller trophy and a ten-mile handicap.

The Burgoyne Cup event, at fifty miles, brought a field of eight, of whom only four finished. A. C. MacDonald's Napier retired at twenty miles with a broken gear wheel; E. R. Thomas's 90 horsepower Mercedes at thirty miles, with a broken clutch; William Wallace's 90 horsepower F. I. A. T., at forty miles, with the gasolene tank empty, and Walter Christie's 60 horsepower Christie at forty-five miles, with weak batteries.

Paul Sartori, in Alfred G. Vanderbilt's 90 horsepower F. I. A. T., with a start of 4 min. 50 sec., took the lead in the second round, and held it to the finish. The race was over a ten mile course, and for the first ten miles the best times were: MacDonald's, 7 min. 4 4-5 sec.; Thomas's', 7 min. 59 2-5 sec.; Fletcher's, 8 min. 7 4-5 sec., and Sartori's, 8 min. 16 4-5 sec.

For other intermediate distances the figures are unofficial, but they show E. R. Thomas the leader at twenty miles, in 13 min. 24 sec., and at thirty miles in 20 min. 37 sec., and Sartori the leader at forty miles in 31 min. 54 2-5 sec. Both Sartori, the winner of the race in 40 min. 20 sec., and Fletcher, who did 38 min. 58 sec., from scratch, cut under the old Vanderbilt figures of 40 min. 49 4-5 sec. Controls were established at each end of the ten-mile course, and restarts were made from a standstill.



THE GRAND STAND AND TIMERS' PLATFORM AT DAYTONA.

Of the most remarkable races of the meeting was the twenty-mile event for the E. R. Thomas trophy, in which all of the five competitors, all driving 90 horsepower cars, made the journey under the former record of 17 min. 2 sec. It was a time contest, with minute intervals between competitors, and the ten-mile turn neutralized it. A. C. MacDonald's six cylinder Napier was a comparatively easy winner in 15 min. 23 sec.

The final of the Major Miller trophy was a close race between MacDonald in his 90 horsepower Napier and E. R. Thomas in his 90 horsepower Mercedes. The former won by three and one-fifth seconds in the record time of 6 min. 15 sec. This is a cut since the beginning of the meeting of thirty-five seconds in the mark set last year by William K. Vanderbilt, Jr., E. R. Thomas having set a new mark of 6:31 4-5 last Saturday. The summary:

FIFTY-MILE HANDICAP—FOR BURGOYNE CUP.

Paul Sartori, 90 h. p. F. I. A. T. (4:50)..... 1
E. Fredericks, 90 h. p. Mercedes (4:01)..... 2
Chas, Canaut, 45 h. p. De Dietrich (8:00)..... 3
H. W. Fletcher, 90 h. p. De Dietrich (scratch).. 4
Times—Sartori, 40:20; Fredericks, 41:58⅘; Canaut, 46:25⅘; Fletcher, 38:58, record. Also ran: A. C. MacDonald, E. R. Thomas, William Wallace and Walter Christie.

TWENTY MILES—FOR E. R. THOMAS TROPHY.

A. C. MacDonald, 90 h. p. Napier..... 1
Wiliam Wallace, 90 h. p. F. I. A. T..... 2
H. W. Fletcher, 90 h. p. De Dietrich..... 3
Paul Sartori, 90 h. p. F. I. A. T..... 4
E. Fredericks, 90 h. p. Mercedes..... 5
Times—MacDonald, 15:23; Wallace, 15:34; Fletcher, 15:36⅘; Sartori, 16:05; Fredericks, 16:25⅘—all inside previous records.

TEN MILES—FOR MAJOR MILLER TROPHY.

A. C. MacDonald, 90 h. p. Napier..... 1
E. R. Thomas, 90 h. p. Mercedes..... 2
E. Fredericks, 90 h. p. Mercedes..... 3
Times—MacDonald, 6:15 (record); Thomas, 6:18¼; Fredericks, 7:25⅘.

TEN-MILE HANDICAP.

C. Canaut, 45 h. p. De Dietrich (2:15)..... 1
M. Roberts, 40 h. p. Thomas (3:20)..... 2
E. R. Thomas, 90 h. p. Mercedes (0:05)..... 3
E. Fredericks, 90 h. p. Mercedes (0:40)..... 4
Times—Canaut, 8:02⅘; Roberts, 8:54⅘; Thomas, 6:21⅘; Fredericks, 7:16⅘. Also ran: William Wallace and H. W. Fletcher.

RECORD TRIALS.

One Mile.

H. L. Bowden, 120 h. p. Mercedes..... 0:34⅘
Walter Christie, 60 h. p. Christie..... 0:40

One Kilometre.

A. C. MacDonald, 90 h. p. Napier..... 0:25⅛

No Sanction for Hotel Keepers' Crowd.

Daytona, Jan. 31.—The A. A. A. has made short work of the Ormond Hotel Racing Association, and the two self-exiled Englishmen who inspired it and who long ago left their marks on professional sport will have a chance to show the Ormond Hotel sportsmen a few of those fancy tricks they practised in "the rare old days of yore" when it was a case of "root, hog, or die."

The A. A. A.'s short work consists in having granted sanction to the Florida East Coast Automobile Association for the holding of races at any time between January 25 and March 1, 1906.

The Ormond Association will not be recognized by the A. A. A., which means that the English professional pals will have to play outlaws again if they would secure a "bit" of the hotel money or even free bed and board and an excursion to Florida next winter.

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SIDELIGHTS ON THE CARNIVAL

Men, Women and Incidents that Added to the Interest of the Florida Function.

Irresolution and indecision seemed to characterize the whole carnival. The trouble was nobody seemed to be "It." The man who was supposed to be manager disclaimed management, and instead spent the greater part of his time explaining to his auditors what he would do if his hands were not tied. On the other hand, the committee, clothed with indefinite authority, seemed afraid to do anything without a resolution of the board of directors. This conflict of authority brought about a bewildering state of affairs; nobody seemed to know anything, and questions were passed from one official to another. Even Referee Temple himself did not know all that was going on. A little incident, amusingly but pointedly served to illustrate the much mixed situation.

In the State of Florida there is a modest railroad man, who is a whole encyclopedia of information, and whose catchphrase is placarded all over the State, "Ask Mr. Foster. He probably knows," is familiar to every traveller. Some cards bearing the Foster advertisement and attached to a piece of red cord were conspicuously hung on the stand and ropes, and finally Mr. Temple appropriated one of these and pinned it to his coat. Thereafter he laughingly pointed to it when besieged by anxious inquirers.

There was the usual amount of local color and an unusual number of the kind of waving palms described by Simeon Ford as attached to strong right arms.

On the beach a colored man had a ladder



REFEREE TEMPLE AND PRESIDENT WHIPPLE.

and support, about fifteen feet high, surmounted by a small platform. A shaggy, forlorn looking dog would laboriously mount the ladder, lie down on the platform, and in response to the commands of his master would obediently stand on his hind legs, beg and perform a number of tricks, and when the inevitable hat was passed along seemed to follow its results with anxious interest.

At the entrance to the Ormond Hotel an old darky, white of beard and black and shiney as coal, dressed in a fanciful costume, half Indian in style, with a few beads suspended on rawhide thongs dangling from an old pair of deerskin trousers, disported a huge rattlesnake, which he handled with perfect impunity. He would place the reptile on top of the box where it was kept, the tail meanwhile buzzing and rattling at a great rate. He would point a finger at the snake, commanding it to keep still, and at once the rattling would slowly decrease in violence, finally stopping altogether. Then old Rattlesnake Pete would wind the snake about his neck, at the same time explaining to his audience that a rattler's fangs renewed every three weeks, exhibiting a pair of the wicked looking curved teeth, with their poison sacs and showing the hole in the tooth where the venom was ejected, stating that he had been bitten innumerable times, but of course had the infallible remedy at hand, displaying it in the bottle which he kept in the box with the serpent.

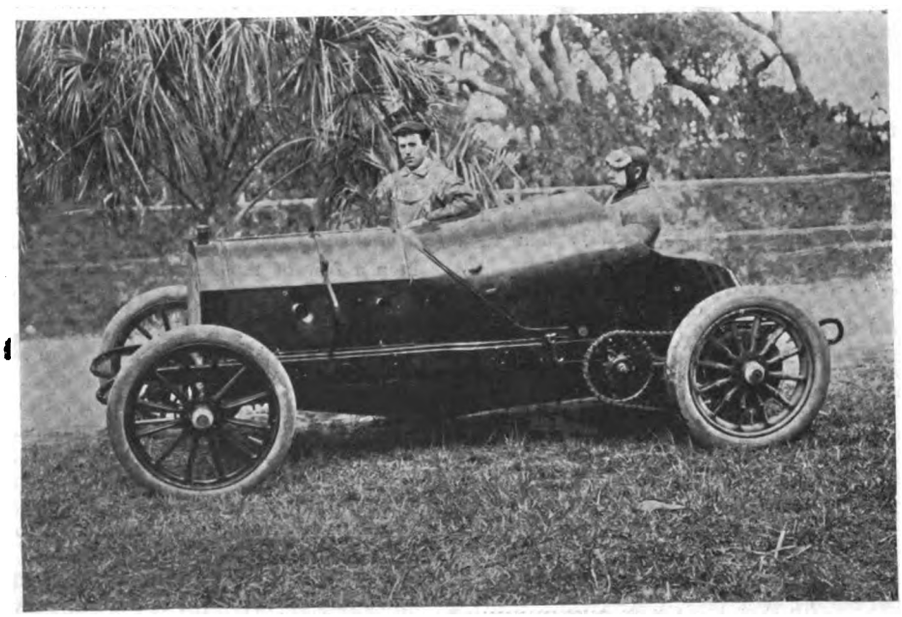
It was all very interesting until he placed the big serpent's head in his wide open mouth and closed his teeth on it, whereupon his women auditors and some of the men hastily turned away.

Styles in dress and human nature there were in plenty. In the clubhouse during the races (the cold driving every one who could get away indoors), there were gathered as fair and as wholesome looking lot of ladies as could be found anywhere, and the place buzzed with the hum of conversation and the clink of glasses, while hot tea and hot other things helped to make an animated and attractive scene.

Of costumes, they were there in bewildering variety, though even mere man could not fail to note that the day has evidently gone by when ladies fair array themselves in hideous garments, miscalled motoring costumes. Instead there were long, rich looking coats, soft, Fedora-like hats, jauntily, even saucily, turned up in front, and a general effect of comfort and contentment.

Of course, there were some bizarre effects. Mrs. Howard Gould and her hat were there, although the dutiful Howard himself was strangely missing. Mrs. Gould appeared last year wearing a milliner's confection that made the eyes of the average man blink. She evidently appreciated the mild sensation it created, as this year she wore a low, pancakelike "lid" with a pink rose directly in its front and looking for all the world like an automobile headlight. From each side of this, her crowning glory, there depended long white streamers that actually trailed on the ground. Her somewhat generous figure was encased (that seems to be about the word, for it is safe to wager the lady would not venture to pick up a pin) in a smart looking dress, dull gray in color, with broad crimson stripes running up and down and flaring out to the hem. At the hotel the bellboys, as usual, were all running for dear life in various directions in response to the lady's not too gentle commands.

On one day Mrs. Gould gave a luncheon for twelve at the clubhouse. The party rolled up in two large machines, and immediately appropriated the whole place. In the late afternoons and evenings Mrs. Gould was a familiar figure in the grillroom, where she entertained lavishly. Among her party one



S. B. STEVENS, ROME, N. Y., IN HIS 90-HORSE GERMAN CAR.

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day was the noted A. D. Proctor Smith, resplendent in a flowing red bow tie of generous proportions, suggesting strongly a nice little boy whom mamma had dressed for dancing school. Mr. Smith also wore white spats, and, at the races, a little dinky brown hat. But for costumes among the men "Jimmie" Breese—he of the roving eyes—easily took the palm with a fur overcoat of a yellowish hue that suggested nothing so much as the hide of a polar bear that had been chained in a stable for six months.

Others among the men wore knickerbockers and had their lower limbs wound round and round with leather or various colored materials, and suggested, especially the portly ones, turkeys trussed and ready for baking.

W. Gould Brokaw, whose "man" drives his car (not, of course, because Mr. Brokaw is fearful of it) was about the clubhouse in a skin vest with white spots, the remaining portions having the appearance of being spotted with ink and then having tobacco juice squirted on top of that. It was certainly mottled enough in irregular patches to suggest almost anything. He also wore the rest of his clothes, of course. To hear Mr. Brokaw talk valiantly of the number of cups "he" has won, and remark there was room on his shelves for a few more, was sufficient to provoke that yawning feeling.

E. R. Thomas, who in this, his first, appearance, surprised everybody by his skilful, fearless driving, proved himself a thorough master of his machine. His long form was attired simply in a dark suit and black sweater, and he looked every inch the sportsman he showed himself to be.

In striking contradiction to the number of these costumes was the one worn by H. L. Bowden, and which fitted his well proportioned figure like the proverbial glove. It was of undressed brown deerskin, with cap to match, tight fitting knickerbockers, leather leggins and tan shoes. It was the simplest and most effective costume in evidence, and was the envy of the men who know.

Back of the timers' stand, where the luckless press men were compelled to stand and shiver, the time was enlivened by a great deal of bantering. Colonel E. H. R. Green, of Dallas, Tex., one of the officials, stopped there at his post day after day, and it was the aim of every other man to work him up toward the end of the stand, from where the wind blew, and then get under the lee of his 287 pounds. Colonel Green good naturedly took it all, and proved himself a thoroughly good fellow.

As a redhot automobilist enthusiast, he has no superior. He talks of Texas and the Dallas track, and his determination, as he expressed it, is "to bring the records to Texas and make the crowd travel down there after them." That he is in earnest was proven



TWO NATIVES "SEE THINGS."

later in the week, when on the toss of a coin he bought the famous Packard Grey Wolf, which held the American kilometre record of 29 2-5 seconds.

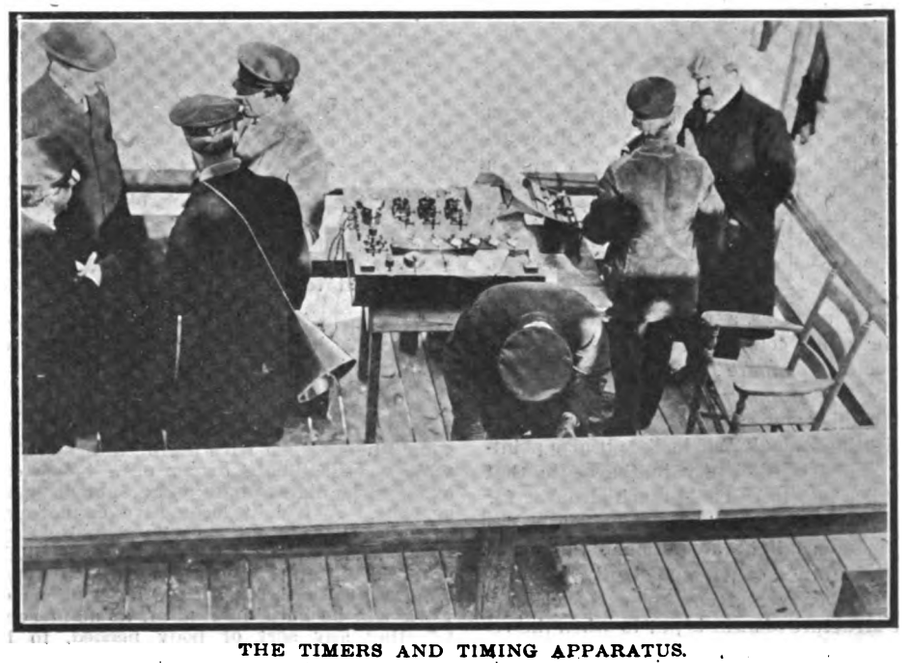
Another proof of Colonel Green's enthusiasm for the sport was shown in his bringing half a dozen of his racing associates and the editor of the leading Dallas paper to see the meet; as he said "so that they needn't be bashful next year in coming up and bringing the records back with them."

In common with the other officials of the meet, the timers had their share of trouble and anxiety. The McMurty electrical apparatus was used; it automatically times the first two machines, six stop watches being set in motion as the machines cross the wire tape and stopping as the machines cross the tape at the finish. The tape is stretched across the sands and fastened to a stout stake at the water's edge, and it was the fear of the timers that Ross's little steamer, the nose of which just cleared the ground, might pick up this wire tape and carry it across the arched body of the car and decapitate him; but Ross himself was quick to eliminate this possibility. On the second day he showed up with what appeared to be a stick of wood set at a curious angle and reaching above his head. To one of the inquirers who sought an explanation Ross gave the reason. The timers breathed easier thereafter.

If the 20 horsepower Ross steamer could do a mile in 38 seconds, what would the 40 horsepower White have done if it had got going? was a question that frequently occurred. The failure of the big White to perform was a bitter disappointment to all concerned, and was due to peculiar circumstances. It was designed to be driven by a shaft, but this was not finished in time, and the car was perforce fitted with chains, which broke every time the tremendous power was applied. After six chains had been snapped asunder, the car was placed under cover and stayed there.

The trade was liberally represented. Among those present were Alexander Winton, A. L. Pope, jr., A. W. Pope, A. L. Riker, M. J. Budlong, Louis Clark, of the Autocar Co.; Harry Layman, S. D. Waldon, Henry Ford, Frank B. Stearns, Bert York, Walter C. Baker, George Weiss, H. Rossiter Worthington, E. L. Thomas, Emile Voigt, of Paris, accompanied by Kenneth Skinner, of Boston; J. W. Gilson, Hartford Rubber Works Co.; W. B. Miller and George Bradley, Diamond Rubber Co.; J. Harry Sheldon, B. F. Goodrich Co.; Arthur T. Smith, G. & J. Tire Co., and E. D. Winans, of the Michelin tire American agency.

One of the surprises, sprung late in the week, was the purchase of the Ross steamer by a New York bookmaker. He proposes to send it around to county fairs and similar events for exhibition purposes, under the management of F. Ed. Spooner. It will be driven, it is said, by Joe Nelson, the former bicycle rider.



THE TIMERS AND TIMING APPARATUS.

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WEIGHT OF BODIES

The Part it Plays and Some Conclusions to Which it Leads.

One of the most encouraging things about the motor car industry is the increasing attention being given by coach builders to the turning out of a larger variety of carriage bodies. It has long appeared strange that while the automobile engineer should be doing everything to perfect details of mechanism, the coach builder should, for so many years, have tried to satisfy the user with the inevitable tonneau for touring purposes and the limousine for general work, and as, despite all sorts of encouragements and competitions, the builder of carriage bodies seemed unable to get out of this narrow groove, he was too often regarded as wanting in initiative and an intelligent appreciation of the enormous field being opened up to him by the automobile.

As a matter of fact, says the Motor Review of Paris, it is only within the past year or two that the coach builder has had any real opportunity for showing his skill. At first the building of car bodies was only a part of his business. Not knowing the dimensions of the frames, which varied with each maker, he had to turn out the bodies to order, the customer selecting from a limited number of types, but as soon as frames were built to a common standard, and there was an increasing demand for carriage work, a large number of coach builders began to lay themselves out solely for these requirements. There yet continued to be a good deal of uncertainty as to what the motoring public really needed. The coach builder could only study these needs and see in what way he could fill them, for it was obviously useless starting right away with a number of novel and elegant patterns that for some reason or another would be unserviceable. So long as the motorist, for instance, wanted a high speed car for long tours. and laid the vehicle up for the winter, he preferred a light open body, even though it offered very little accommodation, but nowadays he wants a vehicle that will be equally suitable for summer and winter, town and country use, and he also requires a roomy and comfortable body with as much seating capacity as possible. In short, the motor car has come to be looked upon as a general all round vehicle in which comfort, protection and seating room are of more importance than speed alone.

While this gave the coach builder a freer hand in the designing of bodies, it also pointed to a serious difficulty in the sense that the bodies had to be made much stronger for the increasing loads. At a time when bodies were made as light as possible, the coach builder had not taken sufficiently into account the heavy and continuous shocks the upper structure of a car is put to when the vehicle is travelling at high speeds over many kinds of roads, jarring, jolting and jumping over ruts, stones and drains. The use of aluminum and other devices for reducing weight did not prove satisfactory. The bodies had to be strengthened, and at the same time there was a demand for covered bodies, well upholstered and fitted with folding seats for carrying additional passengers. Even this was not sufficient. Some automobilists wanted house cars, with swivel arm chairs and seats that could be turned up for beds; a table, lavatory, kitchen and other conveniences for enabling the fortunate owner to wend his way through the world independent of hotel keepers. The greatest genius in coachbuilding cannot produce a light body of this kind, with all sorts of furniture and fittings, if it is to be strong enough for the work.

Having to carry such a heavy load, the chassis has also had to be strengthened. The frames for big cars are often pressed out of one steel plate, forming an undershield, and with this considerable total of deadweight the engine power and the strength of the car have to be increased. It is hardly necessary to insist on the difference in tractive resistance a small additional load will make, although the importance of this in a touring car, up to a certain limit, may be overrated. The thing to be guarded against is making the cars unnecessarily heavy. If, after providing for the needs of customers, it is possible to cut down some of the weight without sacrificing the strength of the body, it is evident that so much will be gained in the running economy of the vehicle. What has made this question of weight a particularly serious one is the complaint of tire firms that if the coach builders continue to turn out increasingly heavy bodies, the cars will be too heavy for the tires; not that they object to the increased business resulting from a wholesale destruction of tires, but they evidently fear that the considerable expense in replacing tires will ultimately drive the owners of these big cars to try something else. Michelin jumped into the breach with a challenge cup which is to be awarded to the coach builder fitting the lightest body, fulfilling certain specified conditions, on a particular chassis. The coach builders are not altogether pleased at being thus singled out for responsibility, and there is some talk even of their offering a challenge cup to the tire firms for a stronger pneumatic tire. It is certain that they are placed in a very awkward position by being obliged to provide as much comfortable accommodation as possible, and put enough material into the bodies to withstand the shocks they are constantly put to under all conditions of running.

After all, the solution of the problem seems to rest with the user. If he wants to drive at thirty-five to forty miles an hour, he must sacrifice the dead weight and load; if he desire to travel with a covered car carrying half a dozen passengers and luggage, he should be satisfied with taking things easily, while the fortunate owner of a house car ought to be able to take no account of speed or time. A freight locomotive cannot run as fast as an express, so why should a family touring car try to emulate the high-powered tonneau? In time, recognized types of cars designed for special descriptions of work will be built, instead of, as at present, selecting any sort of body needed, to be fitted to one type of chassis.

HOW GERMANS ARE TAUGHT

The Thorough System that is in Vogue in Their School for Chauffeurs.

From more detailed advices it appears that the German school for chauffeurs recently instituted presents something out of the ordinary and its possibilities merit consideration. The Teuton has gone into the subject with that thoroughness and painstaking attention to detail characteristic of him in all things, so that his claim to rank in the vanguard cannot now be disputed.

He has likewise been the first to realize that the haphazard method of making chauffeurs now in vogue is a drawback to the development of the industry, and that, no matter how good a car may be, it is incomplete without a thoroughly experienced hand at the wheel. As expressed in an article descriptive of the first school of this kind recently established in Germany, "a bad chauffeur will spoil ten good buyers, while one with a good knowledge of his subject can win many friends for the automobile." And the subject of the "chauffeur as he should be and should not be" is one that has occupied considerable space in the German automobile press.

The theory of the many complex mechanisms on the motor car is as essential as the practice of their functions, and, compared with the course of instruction outlined for the German who would "chauff," the manner of inculcating the rudiments in the beginner here is as a primary to a post-graduate university grind. First of all, the student delves into the mysteries of a four cylinder 24 horsepower chassis, and a large amount of the instruction centres about this before he can go any further. Having learned to recognize the beauties and intricacies of his future charge in the ensemble, he must then dismantle it, piece by piece, until the last degree of dissolution attainable has been reached, and then the functions of every constituent part, whether moving or fixed, is gone into down to the most minute detail, and it is now up to the class to restore thing to their places in working shape. It must be admitted that in no other way can the same amount of practical instruction be gained as in the manner outlined. The average man who "knows it all" can, with the aid of a wrench and screw driver, spread the parts of a machine so thoroughly that even an expert would be puzzled somewhat in reassembling them; but experience is essential to know just what to take apart and where it belongs when it comes to reassembling. This is the foundation, but the instruction then proceeds to questions of frames, axles and bearings, with a large quota of tire knowledge punctured with some of the vagaries of this adjunct when it meets its natural enemies, as tacks and the like, or through other causes mysterious and unfathomable, it shows a disinclination to re-

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tain the breath of life. The various makes of rim cushions are gone into and their good and bad points dwelt upon at length.

Then, and then only, does the student get a chance to start the engine, and in all probability the instructor has short-circuited the spark plug or inadvertently done something else to render the engine innocuous, just to make it interesting for his pupils and test their knowledge of cause and effect as applied to the gasolene motor. After managing to get under way, there is a gymkana steering tournament in the schoolyard for novices who have never yet wrecked a car, and once the proficiency of the new "autolenker" in avoiding such a denouement, well established, the whole fleet, comprising some half dozen or more cars of various types, go on a cruise in the country, and breakdowns from causes, probably arranged for well in advance by the instructors, have to be investigated.

Once through such a mill in the fourteen-hour-a-day, learn-things-from-top-to-bottom fashion that the Teuton affects, a chauffeur that knows how to guard against trouble and who is on familiar terms with the variegated forms in which the latter appears on the road should be a possibility.

Oldsmobile Climbs the Andes.

A cablegram received on Saturday last by the Olds Motor Works from Buenos Ayres, Argentina, brought the news that Ramon Camano, in company with a party of friends, performed the remarkable feat of crossing the Andes in an Oldsmobile light tonneau car.

The trip was made from Buenos Ayres to Chili, and traversed for many hundred miles the roughest pampas roads, making the ascent of Cordillera Mandoza, on the Chilian sides of the Andes, which is 13,000 feet above the sea. The trip was a complete success. The dangerous descent of Cordillera Mandoza was safely negotiated, and the daring tourist arrived at the seacoast of Chili without mishap.

Mr. Camano is at the head of the firm of Ramon Camano & Co., which has represented the Olds Motor Works in the Argentine Republic since 1902. Recent reports from Buenos Ayres state the proportion of Oldsmobiles in use to be about 75 out of the 150 cars owned in that city.

Italy Also Has a School.

Turin, the centre of the automobile industry in Italy, can now boast of an automobile school for the instruction of chauffeurs and automobile mechanics. The Mayor of Turin is the honorary president of the institution, which, though recently organized, has no less than 120 pupils.

There are two different courses, one for those who wish to serve in the capacity of chauffeurs to owners of automobiles, and the other is for those who have cars and wish to drive them personally, or, to use the words of an Italian sporting paper, "for hired help and gentlemen."

TEXAS HAS A BEACH

Also a Green, and the Combination May Cause Florida to "Take Notice."

Daytona, Jan. 27.—While Daytona and Ormond may be said to be quarreling over the bone and organizing to obtain each a shade of it, there is danger or promise that a third party may slip in and carry it off, or, at any rate, prove such a serious rival that the glory of Florida may be at least somewhat dimmed. Although not suspected of harboring aspirations of the sort, Texas is the latest entrant in the field.

In conversation with the Motor World man



COL. E. H. R. GREEN, OF DALLAS, TEX.

this afternoon, that big, wholesouled sportsman, Colonel E. H. R. Green, of Dallas, Tex., said the Lone Star State possessed a beach compared with which the Ormond-Daytona stretch is a mere billiard table. The stretch of Texas coast which he had in mind is 168 miles, and every whit as hard and as smooth as Florida's wave washed strand. Colonel Green said that, although the matter of a speed carnival on the Texas beach had not passed the talking point, he intimated plainly that it is in well defined view. As he is free handed with his abundant means and is a railway president to boot, and has a reputation for "doing things," it appears reasonably certain that the last has not been heard of the project.

Colonel Green is very much infatuated with automobiles and deeply in earnest in making things hum. He already has an extensive "stable" of racing cars, which he purposes adding to, and says the three-mile circular track which has been talked of in Dallas is no dream, but surely will be built. He also has decided views on the amateur question, and, although he weighs 287 pounds—"and part of that is cork," as he expressed it (he has a cork leg)—he is ready to get up and drive his own cars, but not against hired drivers.

CHICAGO IS READY.

(Continued from page 897)

Chicago Rawhide Mfg. Co., Chicago, Space 269, G. A.—Tire protectors.

Continental Engine Co., Chicago, Space 328, G. A.—Engines.

Dixon Crucible Co., Jersey City, N. J., Space 270, G. A.—Lubricants.

Excelsior Supply Co., Chicago, Spaces 272 to 276 and 282 to 286, G. A.—Supplies.

Exmoor Storage Battery Co., Chicago, Spaces 319 and 320, G. A.—Batteries.

Mahoning Automobile Co., Youngstown, Ohio, Space 176, M. F. A.—Mahoning gasolene cars.

Hagaman & Hammerly, Chicago, Space 118, M. F.—Supplies.

Holsman Automobile Co., Chicago, Space 1[illegible], M. F.—Holsman gasolene cars.

Hammer Motor Co., Detroit, Mich., Space 152, M. F. A.—Hammer gasolene car.

Hill Mfg. Co., Chicago, Space 264, G. A.—Bodies and canopies.

India Rubber Co., New Brunswick, N. J., Space 226, G.—Tires.

Kilfyre Co., Chicago, Space 144, M. F.—Fire extinguishers.

Knoblock-Heideman Mfg. Co., South Bend, Ind., Space 222, G.—Ignition apparatus and carburetters.

Kimball, C. P., & Co., Chicago. Spaces 277 to 279 and 287 to 289, G. A.—Bodies.

Kaestner, Chas., Mfg. Co., Chicago, Space 292, G. A.—Carburetters.

Long Mfg. Co., Chicago, Space 252, G.—Accessories.

Lauth, J., Co., Chicago, Space 304, G. A.—Supplies.

Limousine & Carriage Co., Chicago, Space 313, G. A.—Automobile bodies.

Moline Automobile Co., Moline, Ill., Space 103, M. F.—Moline touring cars.

Monarch Automobile Co., Chicago, Space 113, M. F.—Automobiles.

Marble-Swift Automobile Co., Chicago, Space 175, M. F. A.—Gasolene cars.

Motor Car Supply Co., Chicago, Spaces 298 and 299 and 321 to 323, G. A.—Supplies.

Merrill-Stevens Mfg. Co., Chicago, Space 315, G. A.—Standard automobile jack.

Remy Electric Co., Anderson, Ind., Spaces 218 and 219, G.—Ignition apparatus.

Stoddard Mfg. Co., Dayton, Ohio, Spaces 173 and 174, M. F. A.—Stoddard gasolene cars.

Standard Oil Co., Chicago, Spaces 191 and 192, G.—Gasolene.

Stolp Mfg. Co., Chicago, Space 248, G.—Cooler tubing.

Standard Carriage Lamp Co., Chicago, Space 281, G. A.—Standard lamps.

Star Remedy Co., Chicago, Space 314, G. A.—Puncture bands.

Tincker Automobile Co., Chicago, Space 143, M. F.—Tincher cars.

Vesta Accumulator Co., Chicago, Space 280, G. A.—Batteries.

Whitely Steel Co., Chicago, Space 21, G. A.—Parts.

Woods Motor Vehicle Co., Chicago, Spaces

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30 to 32 and 46 to 48, M. F.—Electric automobiles.
Mead Cycle Co., Chicago, Spaces 147 and 148, M. F.—Benz gasolene cars.
Advance Parking & Mfg Co., Chicago, Space 327, G. A.—Engine packing.
Automobile Supply Co., Chicago, Spaces 295 to 297, G. A.—Supplies.
Chicago Battery Co., Chicago, Spaces 305 and 306, G. A.—Dry batteries.
Wayne Works, Richmond, Ind., Space 128. M. F.—Gasolene cars.

The following exhibited at New York, and will also stage their wares at Chicago:
Apperson Bros.'s Automobile Co.—Apperson touring cars.
Autocar Co.—Autocars.
American Roller Bearing Co.—American roller bearings.
Acme Motor Car Co.—Acme cars.
Austin Automobile Co.—Austin cars.
Autocoil Co.—Coils.
Aurora Automatic Machinery Co.—Thor motorcycles and fittings.
Bartholomew Co., The—Glide cars.
Blomstrom Motor Co., C. H.—Queen cars.
Buick Motor Car Co.—Buick cars.
Badger Brass Mfg. Co.—Solar acetylene gas lamps.
Baldwin Chain & Mfg. Co.—Baldwin detachable and riveted chains.
Brennan Motor Co.—Brennan gasolene motors.
Bowser & Co., Inc., S. F.—Gasolene outfits.
Brown-Lipe Gear Co.—Gears.
Briscoe Mfg. Co.—Radiators and fenders.
Byrne-Kingston & Co.—Carburetters.
Cadillac Automobile Co.—Cadillac cars.
Coldwell Lawn Mower Co., The—Motor lawn mowers.
Cleveland Motor Car Co.—Gasolene car.
Columbus Motor Vehicle Co.—Gasolene cars.
Concentrated Acetylene Co.—Acetylene gas and gas tanks.
Dolson & Sons, John L.—Dolson cars.
De Dietrich & Co.—De Dietrich cars.
Duryea Power Co.—Duryea cars.
Dayton Electrical Mfg. Co.—Apple dynamos.
Dietz Co., R. E.—Lamps.
Diamond Rubber Co.—Diamond detachable clincher tires.
Dow Portable Electric Co.—Spark coils.
Detroit Steel Products Co.—Steel specialties.
Electric Vehicle Co.—Columbia gasolene and electric cars.
Elmore Mfg. Co.—Elmore Pathfinder cars.
Electric Contract Co.—Electrical goods.
Ford Motor Co.—Ford cars.
Franklin Mfg. Co., H. H.—Franklin cars.
Federal Mfg. Co.—Frames, axles, gears, etc.
Firestone Tire & Rubber Co.—Solid tires.
Fisk Rubber Co.—Fisk mechanicaly fastened tires.
Gray & Davis—Headlight, side and tail oil and acetylene gas lamps.
Goodyear Tire & Rubber Co.—Goodyear detachable clincher tires.
Goodrich Co., B. F.—Goodrich detachable clincher tires.
G & J Tire Co.—G & J detachable clincher tires.
Haynes-Apperson Co.—Haynes cars.
Hartford Rubber Works Co.—Perfected Dunlop detachable and Hartford and Turner tires.
Hartford Suspension Co.—Shock absorber.
Hardy Co., R. E.—Sta-rite spark plugs.
Hendee Mfg. Co.—Indian motorcycles.
Herz & Co.—Spark plugs, etc.
Hine-Watt Mfg. Co.—Lamps.
Hyatt Roller Bearing Co.—Bearings.
Imperial Wheel Co.—Artillery wheels.
Jeffery & Co., Thos. B.—Rambler cars.
Jones, Joseph W.—Speedometers.
Kirk Mfg. Co.—Yale cars.
Knox Automobile Co.—Knox cars.
Locomobile Co. of America—Locomobile gasolene and steam cars.
Mitchell Motor Car Co.—Mitchell cars.
Marion Motor Car Co.—Marion air cooled cars.
Maxwell-Briscoe Motor Co.—Maxwell runabout and touring cars.
Model Gas Engine Works—Model gasolene cars.
Michigan Automobile Co.—Michigan cars.
Morgan & Wright, Inc., Chicago, Ill.—Morgan & Wright clincher detachable tires.
Motor Car Equipment Co.—Supplies.
Motsinger Device Co.—Auto sparkers.
McGlehan Odometer & Mfg. Co.—Odometers.
McCord & Co.—Oilers.
National Motor Vehicle Co.—National electric and gasolene cars.
Northern Mfg. Co.—Northern touring car and runabout.
National Carbon Co.—Columbia dry batteries.
Olds Motor Works.—Olds cars.
Oliver Mfg. Co.—Jacks.
Pope Mfg. Co.—Pope-Toledo, Pope-Hartford, Pope-Tribune gasolene and Pope-Waverley electric cars.
Peerless Motor Car Co.—Peerless cars.
Packard Motor Car Co.—Packard cars.
Pierce Co., The Geo. N.—Pierce Great Arrow and Pierce Stanhope cars.
Pierce Engine Co.—Pierce-Racine cars.
Pungs-Finch Automobile & Gas Engine Co.—Pungs-Finch 4 cylinder touring cars.
Premier Motor Mfg. Co.—Premier air cooled cars.
Pantasote Leather Co.—Leather for coverings and apparel.
Pennsylvania Rubber Co.—Tires.
Pope Mfg. Co., New York City—Motorcycles.
Pneumatic Tire Protector Co.—Tire protectors.
Reliance Motor Car Co.—Reliance cars.
Royal Motor Car Co.—Royal cars.
Roche, Wm.—Autogas dry batteries, plugs, etc.
Reid Mfg. Co.—Wolverine cars.
Reo Motor Car Co.—Reo cars.
Rose Mfg. Co.—Lamps.
Sherwin-Williams Co., Chicago—Paints.
Steel Ball Co.—Hill oiler, Hill starter, etc.
Stevens Arms & Tools Co., The J.—Stevens-Duryea cars.
Stearns Co., F. B.—Stearns cars.
Shelby Steel Tube Co.—Seamless steel tubing.
Standard Welding Co.—Rims, tubing, etc.
St. Louis Motor Carriage Co.—St. Louis cars.
Standard Wheel Co.—Artillery wheels.
Sprague Umbrella Co.—Sprague tops.
Swinehart Cushion Tire & Rubber Co.—Swinehart non-puncturable cushion tire.
Smith Co., The A. O.—Frames, axles, gears, etc.
Splitdorf, C. F.—Splitdorf spark coils.
Studebaker Automobile Co.—Studebaker electric and gasolene cars.
Tokheim Mfg. Co.—Gasolene outfits.
20th Century Mfg. Co.—Lamps.
Thomas Motor Co., E. R.—Thomas cars.
Timken Roller Bearing Axle Co.—Roller bearings.
Union Automobile Co.—Union gasolene cars.
Veeder Mfg. Co.—Veeder odometers, tachometers.
Vehicle Equipment Co.—Electric trucks, broughams, etc.
Valentine & Co.—Varnishes.
Wheeler Mfg. Co.—Canopy tops and hampers.
Winton Motor Carriage Co.—Winton cars.
Weston-Mott Co.—Wheels, axles and rims.
Whitney Mfg. Co.—Whitney roller chains and standards.
Warner Gear Co.—Gears.
Welch Motor Car Co.—Welch cars.
Wayne Automobile Co.—Wayne cars.
Wray Pump & Register Co.—Pumps and registers.
Warner Instrument Co.—Specialties.
Willis Co., E. J.—Supplies, parts and sundries.
Waltham Mfg. Co.—Orient touring car and Orient buckboard.
White Sewing Machine Co.—White steam cars.
Webb Co., The—Speed indicators.

As usual in all automobile shows, the demand for space at the Cleveland Automobile Show is so great that the management has arranged to place three exhibits in the equipment room of Gray's Armory, where the exhibition will occupy the main hall. Last year very few tire makers exhibited, whereas in the show to be held on February 20 the majority of these manufacturers have deemed it worth while to have some kind of exhibit.

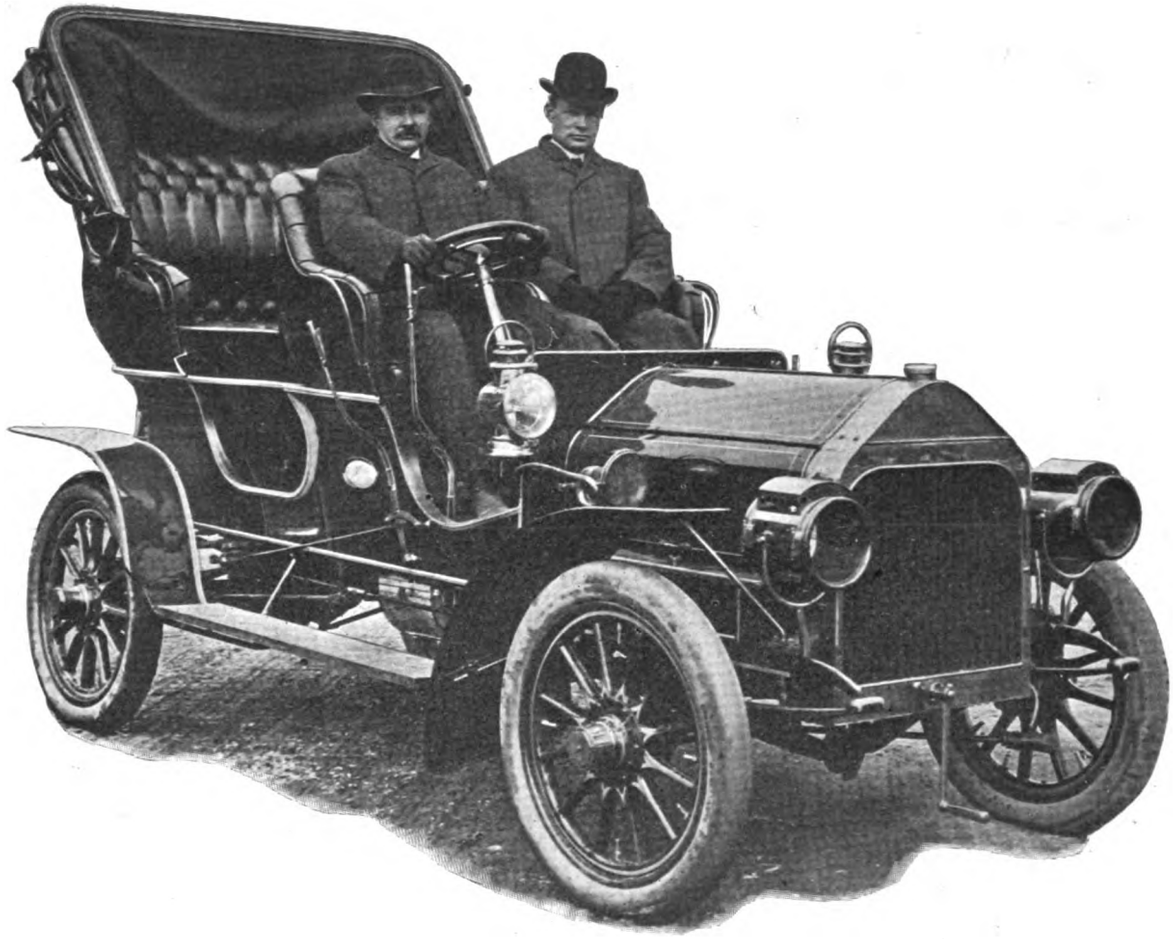
With the Cleveland automobile show coming after Detroit, quite a number of the automobile trade are booking accommodations at the Hotel Euclid, in Cleveland, which is situated closest to the show building.

This hostlery is managed now by Charles MacCarty, or "Mac," as he is familiarly known to all of the trade from his long connection as chief clerk of the Hollenden Hotel. He knows all the requirements of the automobile "bunch," and is acquainted with most of them personally. "Mac" is in a position to offer accommodations satisfying to the most critical.

The Hotel Euclid has good rooms, good service, and, as stated, its location is admirable, especially during show week, although many are making it a regular stopping place when in Cleveland.

Turner & Emerson is the style of a new firm in Halsey street, Newark, N. J. They will handle the Buckmobile.

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ELWOOD HAYNES (AT THE WHEEL), OF THE HAYNES-APPERSON CO., AND V. E. MINICH, SALES MANAGER, IN THE NEW HAYNES 4-CYLINDER CAR.

Long Island's "Continuous Show."

On February 3 the Long Island Automobile Club will open their new house and garage at 360 Cumberland street, Brooklyn, N. Y. The club has arranged for a series of private exhibitions of all the leading 1905 cars. Every Friday night two American manufacturers will show cars in the clubrooms. Edwin Melvin, chairman of the entertainment committee, has sent invitations to a large number of enthusiasts. On February 10 the Oldsmobile Co. will exhibit the new light touring car and the 20 horsepower two cylinder cars. The Cadillac light runabout and side entrance touring cars will also be shown. Announcement will be made by the club of the dates when the exhibitions are held.

Justice as Dispensed in France.

Four days in prison, a fine of $60, and the payment of an annual pension for life to the surviving family of the deceased sounds like rather severe punishment for not having killed a woman with an automobile, but this in substance is what was inflicted on the owner of a car touring through France last fall. The latter was approaching a level crossing in his car when the woman in charge of the gate ran forward to open it and fell dead as the car passed near her, but without touching her, death probably being due to heart disease. The "unjust" decision of the lower court was reversed upon appeal.

Emperor Inspected Their Uniforms.

The German Emperor has evinced great interest in the newly formed volunteer automobile corps, having recently commanded the secretary of the German Automobile Club to appear before him in the newly designed uniform of the corps. This uniform is a sort of brownish gray cloth, similar to that worn by the German expeditionary force in China, with yellow leather knee boots or yellow gaiters. For arms the automobile volunteer will carry a long dirk, similar to that worn by the midshipmen in the royal navy, and a revolver. The Kaiser expressed his general approval of the new uniform, only suggesting changes in a few trifling details.

Got a $3000 Car for $1.

It is not every one who can purchase a new four cylinder Royal Tourist, listed at $3,000, for the insignificant sum of $1, but T. B. Ferrias, of Pontiac, Ill., is a man who has this distinction. Ferrias was the lucky guesser in a contest conducted by the Royal Tailors' Association of Chicago.

Fined for Having Noisy Car.

Because his car made too much noise while standing in the street an automobilist in England was fined $2 and costs amounting to $10.

A policeman first noticed the automobile and watched it for "eight minutes," and still the noise continued. The watch of the defendand did not agree with that of the policeman, as the driver declared he was only away from the automobile two minutes. The magistrate deemed it only natural that the officer of the law was right, and fined the automobilist under the Motor Car Act "for not using means to prevent his car making an unnecessary noise."

No More Horses at Niagara.

J. C. Level, Niagara Falls, who for years has had the reservation carriage concession on the State reservation, announces that horse drawn vehicles will be a thing of the past with him the coming summer.

It is his intention the coming season to place in commission three large automobiles, with a carrying capacity of at least twenty-four persons, and as soon as the demand requires additional cars will be placed in commission. Level has long considered this move, and is of the opinion that the horseless carriage in its present state of perfection is far preferable to the horse in the matter of economy and comfort.

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PIERCE



The Pierce Car was awarded the Grand Prize at the St. Louis Exposition as the best expression of an American car built for American conditions and American temperaments.

The Grand Prize thus awarded is but a recognition of a standard toward which we have been working for five years, and which we believe we have attained.

The six cars which we have built for 1905 comprise the best we know of successful motor car building.

Catalog and technical descriptive matter sent on request.

THE GEORGE N. PIERCE COMPANY,

Makers of PIERCE Cycles. **BUFFALO, N. Y.**

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J. A. PLACE, Geneva, N. Y.
EAST COAST AUTOMOBILE CO., Jacksonville, Fla.
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STANDARD MOTOR CAR CO., Scranton, Pa.
WESTERN AUTOMOBILE CO., St. Louis, Mo.
M. C. BLACKMAN AUTOMOBILE CO., Syracuse, N. Y.
MILLER-MUNDY MOTOR CAR COMPANY, Utica, N. Y.
CENTRAL AUTOMOBILE EXCHANGE, Worcester, Mass.
UNITED STATES AUTOMOBILE CO., Rochester, N. Y.
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CHICAGO AUTOMOBILE SHOW.

Spaces Nos. 49, 50, 65 and 66.

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CARING FOR THE CAR

Many and Various Useful Hints Let Fall by an Experienced Carriage Man.

These hints come from an old carriage man, whose experience cannot but prove of value to the motorist:

Inspect the entire carriage occasionally, and whenever a bolt or clip appears to be getting loose, tighten it up with a wrench, and always have little repairs done at once. Should the tires of the wheels get at all slack, so that the joints of the felloes become visible, have them immediately contracted, or the wheels may be permanently injured.

Examine the axles frequently; keep them well oiled, and see that the washers are in good order. Pure sperm oil is considered the best for lubricating purposes; castor oil will answer, but never use sweet oil, as it will gum up. Be careful in replacing the axle nuts not to cross the thread or strain them.

Keep a small bottle of black japan and a brush always handy to paint the steps when worn by the feet, and also the edges of the tires; nothing helps more than this to keep a carriage looking tidy. Lay on the japan as thin as possible.

Avoid opening a carriage door while the carriage is in motion, as accidents frequently occur from this cause, the door being intercepted by a tree or lamppost and wrenched from its hinges.

Carriages should be kept in an airy, dry coach house. There should be a moderate amount of light, otherwise the colors will be affected. The windows should be curtained, to avoid having direct sunlight strike upon the carriage.

There should be no communication between the horse stable and the coachhouse. The manure heap, or pit, should also be located as far away from the carriage house as possible. Ammonia fumes crack and destroy varnish and fade the colors, both of the painting and lining; also avoid having a carriage stand near a brick wall, as the dampness from the wall will fade the colors and destroy the varnish.

Whenever a carriage stands unused for several days it should be protected by a large cotton cover, sufficiently strong to keep off the dust, without altogether excluding the light. Dust, when allowed to settle on a carriage, eats into the varnish. Care should be taken to keep this cover dry.

When a carriage is new or newly varnished it is better for it to stand a few days, and to be frequently washed and well dried off before being used. Frequent washings with cold water and exposure to fresh air in the shade will also help to harden and brighten its finish. Never allow mud to remain long enough upon a newly varnished carriage to dry upon it, or spots and stains will invariably result.

While washing a carriage, keep it out of the sun. Have the lever of the "set" covered with leather. Use plenty of water, taking great care that it is not driven into the body, to the injury of the lining. Use, for the body panels, a large, soft sponge; when saturated, squeeze this over the panels, and by the flowing down of the water the dirt will soften and harmlessly run off. Care should be taken to wipe the surface quite dry with soft chamois leather after each washing.

Leather top carriages should never stand long in the carriage house with the top down. After raising the top "break" the joints slightly, to take off the strain on the webstay and leather. Aprons of every kind should be frequently unfolded, or they will soon spoil.

As a general rule, a carriage will, with gentle work, retain its freshness better than if allowed to stand for long periods in a coachhouse. If the latter be necessary, draw the carriage out frequently to air, in some shady place, and occasionally wash it.

See that coachhouse doors can be so fastened as not to blow to by the wind.

The carriage should be repainted, or at least touched up and revarnished, as often as once a year. Avoid having such repairs made in a hurry; remember that hurried varnishing implies imperfect varnishing.

In washing the body apply the sponge as well to the under parts and wheels, but use for the latter a different sponge and chamois than those used on the body. Never use a "spoke brush," which, in conjunction with the grit from the road, would act like sandpaper on the varnish, scratching it and, of course, removing the gloss.

Never allow water to dry of itself on a carriage, as it would invariably leave stains. Hot water or soap should never be used in washing a varnished surface.

Enamelled leather tops and aprons should be washed with very weak soap and water. No oil should be put on enamelled leather.

In cleaning brass or silver parts no acid, mercury or grit should be used; the polish should be obtained by friction solely.

To prevent or destroy moths in woollen linings, use turpentine and camphor. In the case of a closed carriage, the simple evaporation from this mixture when placed in a saucer (the glasses being closed) will be found a certain cure.

Be careful to grease sparingly the bearings of the front gearing, using only enough to allow it to turn freely.

May Substitute Automobiles for Flowers.

Los Angeles, Cal., may have an automobile floral parade this year instead of the annual Fiesta. The matter is being considered by the automobile club and the Merchants' and Manufacturers' Association. This plan would not necessitate the raising the $35,000 usually asked for the Fiesta, and, it is thought, the automobile carnival would prove more popular anyway.

FOR A STATE LAW

Washington Motorists Move in that Direction to Nullify Conflicting Local Ordinances.

The Automobile Club at Spokane, Wash., has taken the first steps to head off city regulations regarding the use of highways for automobiling purposes, and also to regulate speed laws by State legislation, by sending a copy of the new bill drafted by the Seattle club to each automobile club in the State and asking for unanimous support in having it introduced at the next session of the legislature.

The act provides that the owner of every automobile, motor vehicle or motor bicycle shall file in the office of the Secretary of State his name and address, with a description of the machine. A certificate will be issued, upon payment of a fee of $2, to the State Treasurer. The number of each certificate preceded by the letters "W. N." shall be displayed on the back of each car in light colored Arabic numerals at least three inches high upon a dark background. This provision, however, does not apply to cars owned by non-residents, if the owners of such have complied with the laws of the State from which they come.

Every automobile using gasolene as a motive power shall use a muffler, and the same must not be cut out or disconnected within the limits of any city or village in the State.

The section of the proposed new bill devoted to speed regulations contains features that have not existed heretofore. Twelve miles an hour is given as the limit within any city or village, and twenty-four miles an hour on the public roads outside the settled portions. The rate of speed in the congested districts and over any cross street is four miles an hour. It is distinctly set forth that any automobile racing on any public highroad will be deemed a misdemeanor, and dealt with according to law.

Present conditions in Washington are very unsatisfactory to automobilists, as every corporate town in the thirty-six counties of the State has an individual automobile restriction ordinance, and this act is designed to eliminate this unpleasantness by making a State universal law. No city, town or county shall have the power to pass, enforce or maintain any ordinance relating to automobiles and vehicles of a like character, and all existing laws are to be declared invalid.

If for any infraction of this act a person is arrested, he may demand the right to have the case heard at once, but if no magistrate can be found, an appearance guarantee bail of $50 must be accepted by the officer making the arrest. In default of bail the car may be held as security.

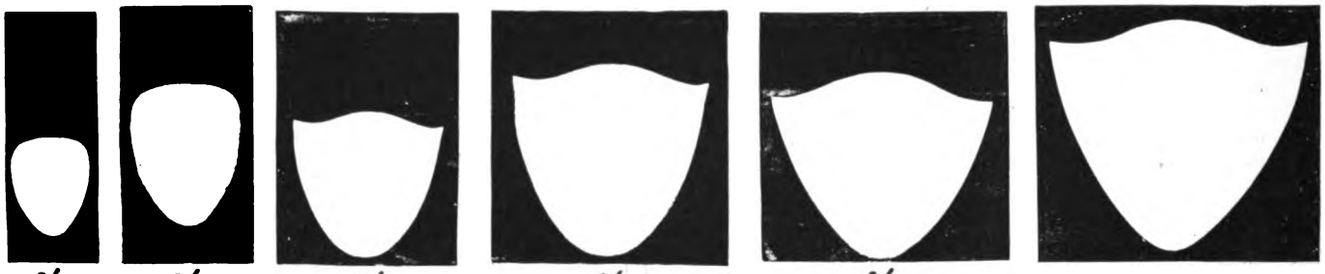
The last clause reads: "The violation of any of the provisions of this act shall be deemed a misdemeanor, punishable by a fine not exceeding $25 for the first offence, nor exceeding $50 for the second offence, nor exceeding $100 for any succeeding offence."

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ACETYLENE BURNERS

Flames of Standard Gauged VON SCHWARZ Burners

under pressure of 2¼ in. W. P. and ACTUAL consumption of



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The Von Schwarz Burners are warranted not to consume more gas than is desired and give a larger whter flame than any other Burner consuming the same amount of gas.

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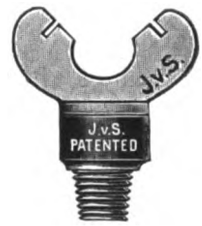
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No Carbonization

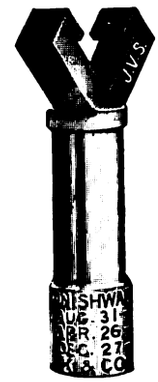
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Perfection.



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Avoid annoyances. **Beware of Infringing Imitations.** None genuine without the number of Patent on pillar, and the initials, J. v. S. stamped on lava part and pillar.

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Railroad Repairs Not Satisfactory.

C. F. Mason, of Clinton, Iowa, is the plaintiff in a damage suit against the Chicago, Milwaukee & St. Paul Railroad to recover $900 damages alleged to have been done to an automobile belonging to the plaintiff's wife in shipment over the defendant company's lines.

The case is a peculiar one. Last October Mrs. Mason shipped the automobile from Clinton to Minneapolis, and when the car reached that city it was a total wreck. The railroad company at once repaired the machine and delivered it to the owner. The car, the plaintiff declares, is now defective, and accordingly asks for judgment to the above amount. The defence have brought automobile experts from Minneapolis, Davenport, Des Moines and Chicago, who have testified that the claim for damages is groundless, as the car is in perfect working order.

Suit Follows Open Drawbridge.

The plunge of an automobile into the Chicago River last August when two men and one woman narrowly escaped death in the water, was recalled Wednesday, when attorneys for the three persons filed three suits for damage aggregating $75,000 in the United States Circuit Court. The occupants of the automobile were Lelia S. Williams, John T. Williams and Arthur P. Gemond. It is charged in the suits that the city was careless in not furnishing proper protection against such accidents when the drawbridge was open.

Clubs Elect their Leaders.

Dr. F. E. Constans was re-elected president of the Brockton (Mass.) Automobile Club at the annual meeting last Thursday night. Other officers chosen were: Vice-president, Henry Burbeck; treasurer, Albert Leighton; secretary, W. H. Marble. Organized February 2, 1902, the club has had a prosperous growth. At the time of organization there were but fourteen automobilists in the city, while now the club's membership numbers eighty-four, half of these joining last year.

The Salt Lake City Automobiling Club was formed in that Utah City last week. The officers are: President, O. H. Hewlett; first vice-president, Samuel Newhouse; second vice-president, Mrs. Jay T. Harris; secretary, Dr. H. S. Scott; treasurer, H. A. McCornick; directors, LeRoi C. Snow, C. H. Wilkes, Mrs. F. E. McGurrin and Mrs. LeRoi C. Snow.

The Berkshire Automobile Club, Pittsfield, Mass., has elected the following officers for the ensuing year: President, F. W. Brandow; first vice-president, Samuel G. Colt; second vice-president, Courtlandt F. Bishop; recording secretary, Erwin H. Kennedy; corresponding secretary and treasurer, L. A. Merchant.

The Milwaukee (Wis.) Automobile Club has elected the following officers: President, Arthur H. Anger; first vice-president, Louis Fuldner; second vice-president, Joseph F. Merkel; secretary, James T. Drought; treasurer, W. H. Pipcorn; captain, R. J. Healy.

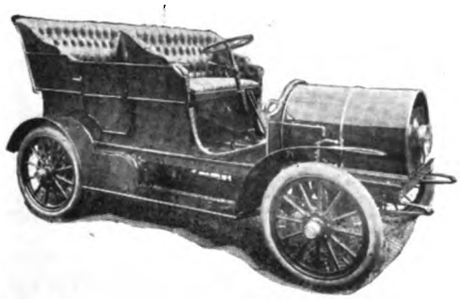
Automobile "Villian" Lands in Hospital.

The automobile scene which forms a feature of "An Aristocratic Tramp," which played at a Hartford City (Ind.) theatre last Saturday night, was so realistic that the audience shrieked with delight—a most "uncommon" occurrence in Western playhouses. A mad race on the stage ensues, in which the villain's automobile explodes, enabling the hero to overtake him. The stage car is made of steel. Just as the explosion occurred the wires grounded and charged the machine with electricity, and the flash from the explosion set fire to the villain's clothes, besides shocking him. His condition is such that the hospital authorities will see that he does not attempt to impersonate the daring chauffeur for several months yet.

Thinks Westerners are More Obliging.

Lewis Russell, of Portland, Ore., who has made the trip from Portland to Los Angeles, Cal., and return, comprising a distance of about two thousand miles, says the people of California are more obliging than those in some of the Eastern States.

"They all seem ready to aid in any way," writes Russell, "and lend a helping hand when needed. I have travelled through a number of Eastern States, where automobiles are considered a public nuisance, and we expected the same kind of treatment on this trip, but were agreeably surprised to have every one treat us so kindly." Mr. Russell was accompanied by his wife, daughter anad father-in-law.



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No Noise. No Vibration. Will not Freeze in Zero Weather. Climb Any Hill. Speedy, Reliable. Simple in Operation.

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87 Main St., ORANGE, MASS.

BOSTON BRANCH: 151 Columbus Avenue.

If you only knew MR. B. A. GRAMM, the Designer and Builder of the

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you would know why it is



The most simple in construction.
The most durable in wear.
The most powerful on hills.
The most accessible to adjust.
The most comfortable to ride in.
The most easy to operate.

IN FACT

"THAT CAR OF QUALITY"

Better write before too late.

Logan Construction Co., Chillicothe, Ohio.

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There is no ARGUMENT—No PROMISE--Equal to MAKING GOOD

The MORGAN & WRIGHT CLINCHER

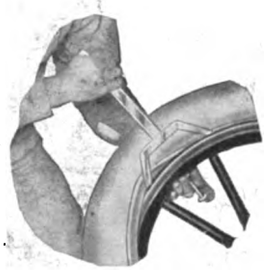
Was the BIG Tire success in 1904.

Because it MORE than held its own in competitive tests. Investigate it at the Show.

MORGAN & WRIGHT CLINCHER TIRE TOOLS

Created a **SENSATION** at the New York Show.

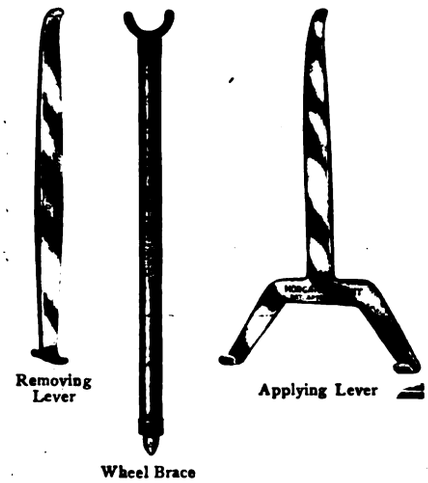
They have REVOLUTIONIZED the handling of Clincher Tires.



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SEE DEMONSTRATIONS AT THE CHICAGO SHOW.

We will also exhibit samples of the Perfected Dunlop Detachable Tire, as manufactured by us. Spaces 195 and 196

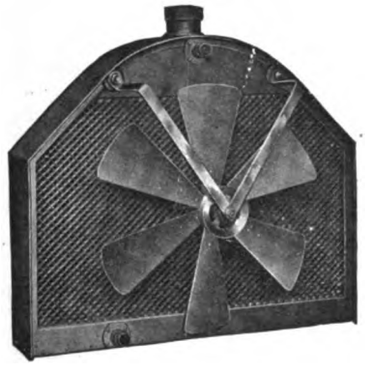
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WHITLOCK COOLERS

For 1905.



The Leading Automobile Builder have adopted the Whitlock Cooler for 1905 for the following reasons:—

1st: Because it is the most EFFICIENT radiator yet produced.

2nd: Because no other approaches it in STYLE and FINISH.

3rd: Because of its POPULARITY, being used on the leading cars.

4th: Because it is a TRIED DEVICE.

5th: Because we pursue a LIBERAL POLICY in taking care of our customers.

6th: Because we can DELIVER THE GOODS, having built about 90% of all cellular coolers made in the United States.

7th: Because our EXPERIENCE for the last two years as the largest manufacturers of coolis worth something to our customers.

We are now shipping coolers on our 1905 orders.

THE WHITLOCK COIL PIPE COMPANY

HARTFORD, - CONNECTICUT.

The Week's Patents.

780,058. Controller for Electric Motors. Thomas S. Perkins, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co., a corporation of Pennsylvania. Filed June 24, 1902. Serial No. 112,957.

Claim—1. A controller for electric motors, comprising a main drum and co-operating fingers and a reversing switch drum and fingers, the finger of the main switch that is connected to the current collector being located at an intermediate point between two sets of resistance fingers.

780,119. Explosive Engine. Richard G. V. Mytton, Meridian, Miss. Filed December 13, 1900. Serial No. 39,785.

Claim—1. An explosive engine, consisting of the combination of an inspirator and compressor, a power cylinder communicating therewith, a piston of two diameters for the respective cylinders, an explosion chamber formed in the piston, and means for conducting the charge immediately after explosion, to one side of the larger piston in the larger cylinder, then into the remaining portion of the larger cylinder on the other side of the larger piston, and finally to the outside atmosphere.

780,130. Variable Cam. Bruno Salzer and Gustav Walther, Chemnitz, Germany. Filed December 1, 1902. Serial No. 133,494.

Claim—1. The combination of a rotary member carrying a ring formed with two guides, a member moved thereby, and two rollers carried by the other member, one on each side of the ring, and means for throwing both rollers simultaneously from one guide to the other.

780,134. Acetylene Gas Generator. Frederick L. H. Sims, Toronto, Canada. Filed April 4, 1901. Serial No. 54,316.

Claim—1. In an acetylene gas machine, the combination with the casing designed to be partially filled with water and the carbide holder rigidly connected to the top of the same and provided with a central bottom orifice of the generating casing connected to the bottom of the carbide holder and surrounding the orifices at the bottom of the same, a valve controlling said orifice, a float within the generating casing, said float projecting below the level of the water in the main casing, and a connection between the float and valve, said valve having an opening therein for communication between the generating casing and the carbide receptacle at all times, substantially as described.

780,140. Air Tube for Pneumatic Tires. John R. Taylor, Wandsworth Common, Eng-

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—Columbia 24 h. p. Mark XLI Touring Car. Mechanical condition first-class; trimming practically new and entire car revarnished. Any speed from 4 to 55 miles per hour. Owner desired to purchase higher power Columbia Car. Address "MARK XLI" care Motor World.

INCREASE your horse power on Oldsmobiles, Autocars, Franklins and other cars about 20 per cent. for $7.20; sent on trial to responsible parties. JOHN HOWARD, 109 North Broad St., Trenton, N. J.

YOUNG man, 23, having had experience and a good, practical knowledge of the Automobile Supply Trade, seeks position with automobile supply house or manufacturer. J. J. B., care of Motor World.

SPECIALTIES.—A large and well known manufacturing firm (Government Contractors) in the Midlands. who are doing business with all the first class Engineering and Motor Manufacturers, is prepared to take over the Sole Agency for England of any useful Specialty. No rubbish required. Highest Bankers and Commercial references given. Correspondence invited. BOX 2539 SELLS, FLEET STREET, LONDON, ENG.

A MORE UNIFORM MIXTURE can be obtained by the use of our automatic air governor when applied to the Oldsmobile mixer. This means more power and speed. Easily attached. Not necessary to remove mixer. Sent upon receipt of price, $2.50. Circular upon application. MORE-POWER CO., Box 175, Lowell, Mass

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

1904 Tonneau Auto Car, canopy top and headlights; run less than 500 miles; A1 condition; $1,100. ARTHUR McNALL, 67 South ave., Rochester N. Y.



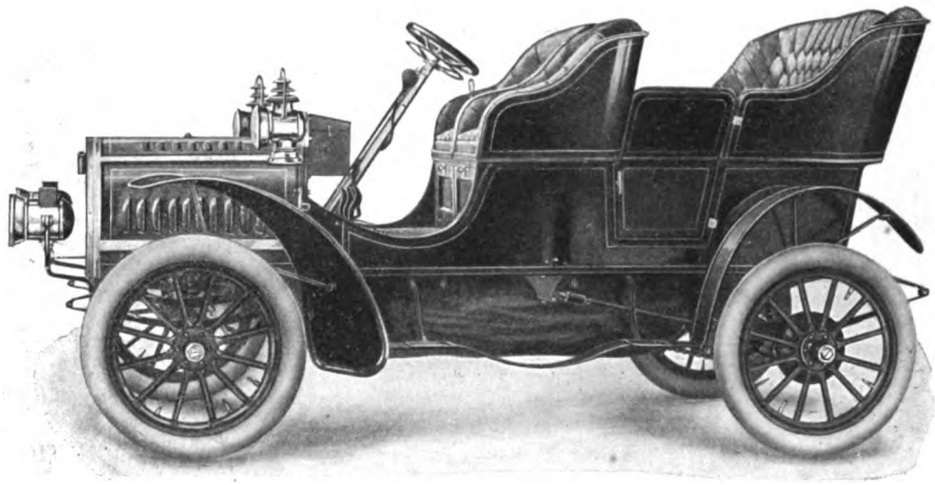
Aluminum Canopy Tops, Extension Tops, Three-Bow Leather Tops, Capo Cart Tops, Soat Upholstering, Aprons and Hoods.

LEINBACH BROS., 253-255 Jefferson Ave., DETROIT, MICH.

Oldest Canopy Builders in America.

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Rambler



SURREY, TYPE ONE, 18 H. P., $1350.

IMMEDIATE DELIVERY.

The operation of this vehicle is both simple and natural. The ignition of the spark is entirely automatic. The brakes are operated by pedals, not by levers. With the steering wheel and throttle attached to it, operable by one hand, the other hand is always free to manage the clutches by the single lever and no confusion is possible.

It has enough power for touring wherever roads are fit for travel. Greater power requires more fuel, more working parts and consequent disorders, a combination that puts a vehicle's operation and repair beyond the ability and means of the average user.

OTHER MODELS, $750, $850, $2000, $3000.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, February 9, 1905. No. 20

MAY GET TOGETHER

Efforts to Organize Independents Making at Chicago—Rumors Regarding Show—Insurance Incident Shows Intensity of Feeling.

Chicago, Feb. 7.—There are strong probabilities that the independent manufacturers will "get together" before the show closes its doors. If they succeed in doing so, it will, of course, carry with it the solution of the show problem so far as the independents are concerned.

A number of them held an informal meeting at the Auditorium on Sunday night, and another meeting for definite action probably will be held later in the week. Few of those who attended the conference are willing to talk, but, according to R. Harry Croninger, of the Dayton Motor Car Company, a settlement—perhaps a sensational one—of the show situation will come of it.

Quite naturally the talk that is going the rounds of the show is "an independent show for independents," to which is added the information that it will be a co-operative effort, all profits being returned to the exhibitors.

There are rumors that the Sixty-ninth Regiment Armory, now in course of construction at Twenty-seventh street and Lexington avenue, New York, has been leased for the purpose, but none of the inner circle will either confirm or deny the report.

There is no doubt that in the interim since the New York show the feeling between the adherents of the Selden patent and those outside the fold has become considerably embittered. As an instance, a representative of one of the New York concerns, who is here, yesterday told a Motor World man that he had been refused fire insurance on his plant because he was not a member of the Association of Licensed Automobile Manufacturers.

"About two weeks ago," he said, "I filled in the usual blank applications, submitted my plant and stock to the insurance inspectors and underwent all the other formalities. Nothing was said or done that would indicate that we were not a good risk, and I, naturally, set back and awaited the receipt of my policy. Imagine my surprise, therefore, when, instead of the policy, I received a letter from the insurance company stating that, as we were not members in good standing of the A. L. A. M., our risk would not be underwritten.

"Unless I am very much mistaken, this constitutes an offense that renders someone liable to investigation by the State Insurance Department, and I am turning over in my mind at this time as to whether or not I shall report the occurrence and ask for an investigation. Having the documentary evidence in black and white, I think I will be able to make out a pretty strong case."

The man concerned seemed to think that in some way the A. L. A. M. was at the bottom of the matter, which, however, will strike the disinterested individual as being inconceivable.

Lozier Swells Capital to $1,100,000.

Plans which for some time have been considered by the principal stockholders of the Lozier Motor Co. have begun to assume definite shape. At a special meeting of the stockholders it was unanimously voted to increase the capital stock from $500,000 to $1,100,000. Over $500,000 of the new stock, which will be issued on March 1, was immediately subscribed. This increase in capital was made necessary on account of the great growth of the marine motor and motor boat departments, and also on account of the additional working capital which will be required in the automobile business.

Richwine Comes East Again.

W. A. Richwine, of Philadelphia, formerly sales manager of the Autocar Co., and late manager of the West Coast Automobile Co., of San Francisco, has returned to the East. He will become manager of the Highland Automobile Co., Pittsburg, Pa., this week.

Canada Increases the Duty.

The Canadian Board of Customs has increased the duty on automobiles to 35 per cent ad valorem, instead of the previous rate of 25 per cent. The duty on rubber tires has been correspondingly increased.

LOOKOUT! WARNS LETTS

His Last Visit Opening Wide His Eyes, he Tells Foreigners America Must be Reckoned With.

W. M. Letts, who formerly was identified with the Locomobile interests, and who is now a member of the firm handling Oldsmobiles in London, has returned to the "tight little isle," and warned his countrymen that they may as well face the fact that the Americans are to prove really serious factors in the markets of the world. Letts spent several weeks in this country and summarizes his impressions in this wise:

"Only those who are keeping in constant touch with America, and have had an opportunity of getting over there, have any idea of the enormous strides that American motor car manufacturers have made within the last eighteen months. I have been interested in American cars for something like five years, during which time I have had an opportunity of going over each year and seeing exactly what they were doing, and I can assure you that within another eighteen months to two years we shall have to count on American competition over here in England. In the early years of the industry every American manufacturer was working out some cranky idea of his own, either in connection with a steam car or a light runabout, with the rsult that so far as the steam business goes they made a number of cars of one type, never improved them, and thought that this car, without any improvements, which would satisfy a man then would satisfy him now. With the exception of the White people—who are building a really good steam car—none of the other manufacturers of steam had the foresight or common sense to continue experimenting and making improvements in their models, with the result, as I say, that with this one exception, the steam car business in America is dead.

"Apart from this the only type that the Americans turned their attention to was the "runabout." One after another came on to the market and went out, and at the present time, although there are other very good runabouts, still I think the Olds Motor Works

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are quite right in claiming that they turn out more cars than any other factory in the world, for the simple reason that they keep improving their car from year to year, and keep the price practically at the same figure. They can only do this by the enormous quantities that they sell. Last year it is estimated that 10,000 Oldsmobiles were sent out of the works to different parts of the world, and up to the present time they have orders for over half that number for delivery this year. With the exception of the Olds Motor Works, most of the manufacturers are now commencing to put upon the market four-cylinder cars, and there are some of the worst specimens of four-cylinder cars coming out of some of the factories in America that the world has ever seen. Last November I went through a number of the factories and had a look at them, and some of the cars were so much scrap iron; but, on the other hand, it is only fair to America to say that some of the firms are turning out four-cylinder cars built on the right lines, retaining the best points of European practice, and strengthening parts which are too weak for American roads.

"While I was over there I had the opportunity of a run on one or two really good cars; in fact, the four-cylinder cars now being built by the Locomobile Company, the Packard, and the Pope-Toledo, are as good as anyone could wish to own, that is, for ordinary work. Strangely enough, the Locomobile Company, when they gave up the construction of steam cars, had a name which was not one of the best, but after realizing that they were on the wrong lines in connection with their steam car business, they went very carefully to work, securing Mr. A. L. Riker as their designer, and getting the very best superintendent it was possible to obtain in America to take charge of their works; then with plenty of funds behind them they started building petrol cars. The result has been that the first year they turned out a very fair car; the second year they built a car that a man could sell at the end of a year and get a very good price for it; but now they have got, in my opinion, the best four-cylinder car manufactured in America; the design and workmanship are alike good. Mr. S. T. Davis, Jr., president, invited me to take a trip with him from New York to New Haven on his 24 h. p., and I was absolutely surprised. I was in America the two last weeks in November, and in those two weeks the Locomobile Company took orders for sixty cars for delivery in the early months of this year at an average price of over $3,000, and they expected to come away from the Madison Square Show—which is taking place about this time—with every car for delivery in 1905 sold.

"Then I had an opportunity of going over the Packard factory, which, by the way, is an entirely new one, built on the very latest principles in a magnificent style. They very kindly allowed me to try their car, which is first class, runs beautifully, and the price is right, and they are full up with orders. The same applies to the Pope-Toledo. There are also several other very good cars, but I think that if I were asked to place the four best American cars I should say: the Locomobile, Packard, Pope-Toledo and Peerless. Winton, at the time of my leaving, had not produced his four-cylinder vertical motor, but I understood it was about ready to come out. With the enormous factory which he has he ought to be able to turn out a good thing.

"The one thing that surprised me more than anything else was the vast capital which was going into the motor companies in the States. Colossal factories are being put up all over the place, and this not only applies to the manufacture of large cars, but to small as well. The Olds Motor Works have built another enormous plant at Lansing, Mich., to deal entirely with their "runabout" class. Their factory stands on 100 acres of ground, and Mr. Smith, president, told me that, taking the whole of the Olds Motor Works factories combined, there was a mile of frontage. Mr. Metzger, of the Cadillac Company, also gave me an opportunity of going over their new factory (it will be remembered that the old one was burned down some time ago). This new factory is very large, and they seem to me to be starting with the idea of turning out cars by the hundreds and thousands—otherwise what will they do with their huge plant?

"I must say that this last trip of mine to America was the most surprising that I have ever had—I mean in regard to the wonderful progress that has been made during the last eighteen months—and every one of the manufacturers without exception realizes that he has his own market to supply, although they are all looking to get into the European market, and are determined to get there when they have their cars perfected, and can come over and enter into open competition with our French and German cars. So far as the export trade to America is concerned, which at the moment is very considerable—bearing in mind that they have to pay a duty of about 49 per cent.—I think that in two years' time the export trade to America, with this tariff, will be very small. Please do not misunderstand my remarks. I am not saying that America is coming over to England and going to wipe us all out; there is no such idea in my mind; but what I do say is that we are going to get serious competition from America within the next few years."

Russia Sustains Another Defeat.

Russia was defeated again last week, not by the Japanese, but by the Oldsmobile people. Andrew Zembriska, the Moscow agent of the Olds cars, who is now in this country, wagered that a 20-horsepower Olds touring car could not make the trip through the snow from Detroit to Chicago, and the makers promptly "took him up." Several times the car had to be dug out of the snowdrifts, but the trip of 272 miles was made in a fraction under eighteen hours. The car was driven by G. S. Buck, advertising manager of the firm.

The Week's Incorporations.

Lansing, Mich.—The New Way Motor Co., under Michigan laws, with $100,000 capital.

New York, N. Y.—"Le Marquis" Tire Co., under New York laws, with $25,000 capital. Directors—Arthur C. Brady, Charles I. Scott, Henry Nicot.

Dover, Del.—Oxford Motor Car Co., of Pittsburg, Pa., under Delaware laws, with $500,000 capital; to manufacture motor cars and vehicles of all types.

New York, N. Y.—Times Square Automobile Co., under New York laws, with $10,000 capital. Directors—Morris Froehlich, Jesse Froehlich and Frederick Bloch.

Newark, N. J.—The Ford Kerosene Engine Mfg. Co., under New Jersey laws, with $125,000 capital. Incorporators—Henry Hosier, Samuel Oshinsky, Henry B. Ford.

Paterson, N. J.—The Paterson Automobile Exchange, under New Jersey laws, with $10,000 capital. Incorporators—George M. Rusling, E. De Witt Carlough, Arrilla I. Carlough.

Cleveland, Ohio—The Automobile Livery & Repair Co., under Ohio laws, with $10,000 capital. Incorporators: L. P. Stein, G. C. Conway, C. E. Harriet, C. L. Snyder and R. E. Hyde.

Detroit, Mich.—Walker Motor & Machine Co., under Michigan laws, with $25,000 capital, $4,750 paid in. Stockholders—Chas. L. Walker, Henry A. Teall and J. Wilfred Drummond.

Niagara Falls, N. Y.—Niagara Tachometer & Instrument Co., under New York laws, with $200,000 capital. Directors: Charles R. Huntley, Addison H. Hinman and George J. Howard, of Buffalo.

Chicago, Ill.—The Importers' Co., under Illinois laws, with $2,500 capital, to do business in automobile and electrical sundries. Incoroprators—Ralph W. Condee, L. W. Condee and B. H. Kuehn.

Minneapolis, Minn.—Moulton, Jordan Motor Car Co., under Minneapolis laws, with $120,000 capital, to manufacture automobiles. Incorporators—E. H. Manton, Jr., Theordore C. Jordan and Earl A. MacVicar.

Detroit, Mich.—Leinbach Bros. Co., under Michigan laws, with $7,000 capital; to manufacture leather covers and trimmings for automobiles. Incorporators. E. L. Leinbach, Clyde Leinbach and A. W. Muer.

Minneapolis Trade Elects Old Leaders.

The Automobile Dealers' Association, Minneapolis, Minn., made no change in the election of officers at their annual meeting. Albert Strong was re-elected president; W. T. Walker, secretary, and E. H. Moulton, treasurer.

In a discussion regarding the Chicago show the president urged the members to refrain from making disparaging remarks in their business operations about competitors who hail from the same town, and to act in union as much as possible.

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WANTS GARAGES LICENSED

Scarritt Advocates Such a Law and Would Have Road Rights Made Revocable Privileges.

In his address, speaking to the subject "Automobile Legislation," at the Automobile Club of America on Tuesday, Winthrop E. Scarritt, former president of the club, dwelt particularly on the inadequacy of fining reckless drivers, and came out, quite unexpectedly to his handful of hearers, with a suggestion to withdraw a man's right to use the roads.

He advocated "that on conviction, in addition to other penalties for a first offence, let the license certificate be revoked for a period of fifteen days; for a second offence, a revocation of thirty days, and for the third offence a revocation of one year."

Scarritt contended that 90 per cent of automobilists suffer on account of the remaining 10 per cent, which consists of either the harum-scarum, daredevil chauffeur who can never be taught a lesson by a fine or the wealthy car owner who drives recklessly and who is not in the least perturbed about paying the fine.

It was his opinion that the object of sound legislation is to protect the public, but not retard the development of a new and important industry.

"We are practically twelve years behind on account of the restrictions placed on automobiling," he remarked.

Another submonition concerned public garages, and that they ought to be under the supervision of the law. "They should be required to take out a license," he said, "and keep a record of each machine, showing the exact time it was taken out and the exact time it was brought back. The duplicate of this record should be furnished the owner of the car once a week, and no machine allowed to go out without written orders from the owner."

Concerning chauffeurs, he recommended "that they take out a license and keep a record of the car when it leaves and returns to the garage. In the event of the car becoming disabled to immediately notify the owner."

Other suggestions were: "That all cars above 5 horsepower be required to have two brakes, one of which should be double acting; that a speed of twelve miles an hour in corporate limits be permitted, and in thinly populated districts eighteen to thirty miles an hour; no speed on highways greater than is justly deemed safe."

"Due to the reckless chauffeurs, all automobilists are singled out and put in the criminal class, with conspicuous tags attached to the vehicles," he added.

Scarritt then gave statistics, mentioning the recent test on Fifth avenue, where it was proved that 437 horse drawn vehicles exceeded the speed limit and no arrests were made, whereas automobilists travelling at no greater speed than the horse drawn vehicles were promptly arrested.

The lecturer called attention to the fact that a man's word, which is taken everywhere without the suspicion of a doubt, is doubted once he is in court on a charge of overspeeding.

Hot Shot for Detroit Men.

Sensational allegations were made in the Toledo (Ohio) court, before Judge Morris, last Wednesday, relative to the Toledo Fire, Police, Notification & Auto Parcel Delivery Co., which had so long a name and such a short existence. Arvide C. Hester was made receiver of the defunct company, as mentioned in the last issue of the Motor World, and brought suit against the directors, charging gross mismanagement.

Attorney Monnette, for the receiver, made a scathing speech in court. "Two men came down from Detroit with the idea that Toledoans were gullible and organized the company, pocketing—yes, stealing—all the money. The directors have paid no attention to the business, but have let it go to the devil."

Creditors will get very little, if anything, and Hester will probably have a libel suit to fight.

Perkins has Ideas, Wants a Factory.

W. C. Perkins, of Stanhope, N. J., thinks he has formulated a sufficient number of workable ideas to manufacture automobiles. Accordingly he has appeared before the Stanhope Board of Trade and petitioned them to erect a suitable factory building, and suggests one 50x100 feet. A committee has been canvassing the town for subscriptions, but seems to have met with little success as yet.

Fire Wipes Out Ware Dealer.

Another winter fire has destroyed the automobile and repair shop of E. S. Ruggles, Ware, N. H. The cause of the conflagration was a defective chimney in another part of the building. The loss is estimated at $5,000, and the amount of the insurance only covers half of that loss.

Two Plants Instead of One.

The Wilson & Hayes Mfg. Co. write that the report that they are removing their body, bonnet and metal specialty factory from Detroit to Lansing, Mich., is due to misunderstanding. What they are doing is enlarging their Detroit plant and establishing a branch factory at Lansing.

Miller Gets Move Room.

Charles E. Miller, the well known New York jobber and manufacturers' agent, has finally obtained the loft adjoining his present place in Reade street. It adds a space 25x75 feet to his much needed elbow room.

Fire Destroys Gates's Garage.

Frank H. Gates was among the sufferers from the fire which swept Islip, Long Island, last week. His garage and repair shop were completely destroyed.

The Ideal Machine & Automobile Co. has begun business in Lebanon, Pa. J. C. Bowman is its manager.

CHAUFFEURS FOR REFORM

"Not a Labor Union" Declares New Organization and then Outlines Possible Usefulness.

The newly organized Chauffeurs' Association of America, which has its headquarters in Philadelphia, is clamoring for reform. One of the so-called abuses which it hopes to correct is the operating of automobiles by coachmen and laborers under the owner's license. Frank Bradley, president of the organization, has this to say in the chauffeurs' defense:

"This is not a labor union. We do not intend to dictate wages or hours, but rather to protect professional chauffeurs from the odium which arises from accidents caused by irresponsible persons. It is also our object to encourage the formation of associations in other cities, so that there may be a chain of clubhouses throughout the country where chauffeurs may stop and meet others of the fraternity.

"One of the chief causes of accidents here in Philadelphia and in other cities is the promiscuous granting of licenses to inexperienced persons. Any man may go to the Bureau of Boiler Inspection, and by the payment of $2.50 get a license to run an automobile, whether he knows the first thing about the car or not. A license should not be granted to any person until he has shown that he knows the principles of gasolene, steam and electric automobiles. This, of course, would require a competent city official to conduct examinations. We have nothing against the Bureau of Boiler Inspection, but the trouble lies with the regulations governing automobiling; the sport has grown so rapidly that the city officials have not kept abreast with it. This is true, not alone in Philadelphia, but in nearly every other city.

"Many accidents are caused by automobile owners themselves. They are not, as a rule, practical men, and yet they take more risks than a seasoned chauffeur. If these men were required to pass a rigid examination before they are allowed to have a permit, there would be less accidents. Applicants have to pass a strict examination before they can be admitted to the Chauffeurs' Association, and we consider 'turn about fair play.'"

The Rush for Fisks.

Evidence of the extent to which the Fisk mechanically fastened tire has "caught on" is indicated by the fact that the Fisk factory, at Chicopee Falls, Mass., last week began to work 22 hours out of the 24.

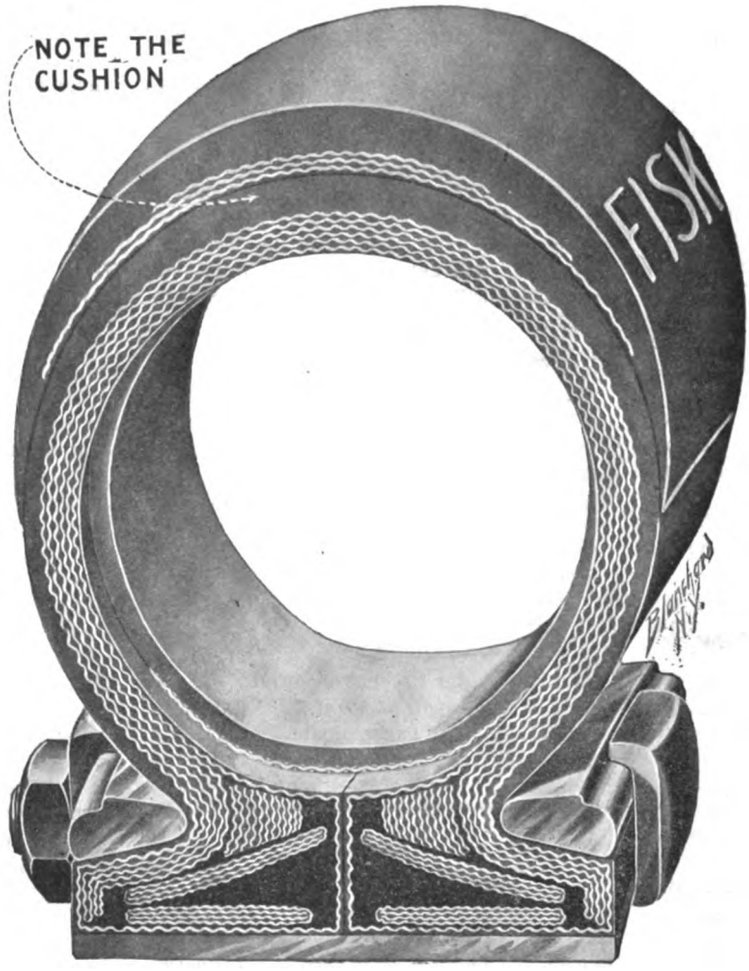
This rushing state of affairs was made necessary, despite the fact that only last month the Fisk people took possession of a new four story addition to their plant, 45x120 feet. At the same time, they moved into their new shipping and office building, which is a three story structure, 87x45 feet, the office occupying one of the floors. The original factory building, which is, of course, still in use, is of three stories, 50x150 feet.

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much about

MECHANICALLY FASTENED TIRES



It was the first tire of the sort—the first **real** automobile tire, and its remarkable success is what has caused the the world to "sit up and take notice." The fact is perfectly obvious to all who use their brains to think with, and conveys a world of significance.

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It's full of "meat."

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SPRINGFIELD, 40 Dwight St.
NEW YORK, 754-756 Seventh Ave.
PHILADELPHIA, 828 Arch St.
ATLANTA, 103 N. Pryor St.
SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
DETROIT, 254 Jefferson Ave.
MONTREAL, CANADA

CHICAGO, 1251 Michigan Ave.
ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
MINNEAPOLIS, 704 Hennepin Ave.
DENVER, 1534 Glenarm St.
SAN FRANCISCO, 114 Second St.
LOS ANGELES, 1034 So. Main St.
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The Length of Frames.

Is the long frame here to stay, or will the experience of the coming season show that the extreme has been overstepped and mark a return to more moderate dimensions in this respect?

As matters stand in this country, the question is somewhat premature, and can hardly meet with a definite answer until its advantages have been balanced against its shortcomings in the scale of experience on American roads, for it is only since the introduction of the side entrance tonneau that what appears to be the maximum, or probably what may prove to be a little too much for safety, has been reached.

Abroad, on the other hand, the consensus of opinion appears to be that the maximum was attained before this added incentive made further lengthening a necessity, and, according to foreign contemporaries, efforts are already making to get around the difficulty. This is particularly true in France, whose makers have usually led the way where frames and bodies are concerned, and it is remarked that several of the leading firms are now building short frames to carry side entrance bodies, and making such a radical departure as to place the engine under the driver's seat in order to accommodate the new arrangement. By this means the usual landaulet, coupé, limousine or double phaeton can be easily fitted to a frame of this type, which is thus shortened almost by the length of the usual motor bonnet, the steering gear being placed well forward so as to economize as much of the front space as possible.

It is said that the long frame has not given unqualified satisfaction abroad during the last season, owing to the fact that with increased length the difficulty of adequately supporting the load and taking care of the strains is added to in inverse ratio.

Excessive weight in the frame itself or an elaborate system of stays or trusses are alternatives equally undesirable, and both of which will add to the tiremaker's troubles, but how otherwise is the requisite strength to be attained? Much can be done by improvement in the quality and suitability of the material employed without unduly increasing the weight, as has been demonstrated in the case of freight and passenger cars built of pressed steel. But the constantly increasing weight of covered bodies is a factor that cannot be ignored, and it is said to be the experience of makers abroad that the long frames suffered badly enough from the jolting and racking over rough roads without the latter. Torsion strains due to the use of the propeller shaft are likewise an incident to be considered, owing to the more general adoption of this form of drive.

The inconvenience of negotiating corners under crowded traffic conditions, as in winter, when the car is used almost entirely in the city, and that of storage of the lengthy car in the ordinary coachhouse are put forward abroad as further detracting from the value of extra length, but these are considerations of insufficient weight to enter into the designer's calculations, and doubtless the former is somewhat exaggerated, as it is safe to say that no difficulty of this nature has been encountered with the long framed car here, which even in its extreme does not surpass the length of the average horse drawn vehicle when combined with its motive power.

American roads are notoriously bad, and if the foreign car with long frame has suffered sufficiently serious damage, when run over the immeasurably superior roads of the Continent to compel its makers to consider a return to former standards of length, it would seem to go without saying that their experience will be duplicated here, but only the latter will tell.

The Dream and the Awakening.

When the wish is father to the thought, the dreams of a day that can be dreamed are past understanding. The conflict between sport and commercialism which served to mar the Florida speed carnival caused some dreams of the sort, if some of the stories printed last week are correctly interpreted. The dreamers saw the galvanization of that dear old reminescence, the American Motor League—saw it swallowing the American Automobile Association and with a firm directing grasp on automobile sport. The dream undoubtedly caused long itching palms to itch the more.

To-day, however, the beautiful sleep picture is seen to have been but an empty nightmare. The A. A. A. has come through the fire unscathed, and with more strength than ever before. All wounds are healed, all breaches closed, and the directing head is one at whom no man dare point a finger. The turn of events has proved most happy in its results, although it must be admitted that it holds small hope for itching palms.

It would have been a sorry day had the reverse proved the case. The idea that two ex-professionals, one a former English runner, the other a Welsh six days' cyclist with a peculiarly interesting past, who have fastened themselves, or attempted to fasten themselves, on the new sport, should, backed by a firm of hotelkeepers, attempt to set up themselves as its dictators or to in any way influence the direction or control of automobiling is repugnant to every sense. It is small wonder that real sportsmen should resent such a situation, or that they should determinedly rally around their standard.

If it were not for the fact that the two professional "sportsmen" in question controlled by mortgage or otherwise influenced certain more or less public prints and have what may be termed a "newspaper following," the whole affair, and, indeed, the so-called motor league itself, would be as amusing as it is significant. The prints are able to make things appear large and rose-hued when in fact they are mere dark specks, and this is the case in this instance. Uncovered,

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the little retinue stands exposed as identically the same set of men who, through the favors of one of their number and who obtained the lion's share, extracted most of the "perquisites" that came of the bountiful days of the League of American Wheelmen—the professional six days' cyclist alone excepted. His "sportsmanship," which reached its zenith during a considerable episode that occurred at Hartford, Conn., placed him outside the L. A. W. pale. Practically all of the others obtained their "bits" in the form of handicapping fees. This is not to their discredit; they doubtless earned their money. But what is remarkable is that several of those who "fell out" with the chief dispenser of patronage, and damned him as lustily as once they acclaimed him, in print and out of it, returned to his shrine when he set up himself or was set up in a seeming position of power in automobiling. Save one, the nearest that any of the coterie come to being automobilists is the possessorship of "automobile cups." It also is worthy of remark that at least four of the men concerned were former business associates of the craftiest and more affluent of the former British "sportsman," while a fifth one, ensconced in an official position in the Chicago Automobile Club, adroitly throws the anti-A. A. A. spitballs in the West, where three other former associates also are located.

Of such is the opposition to the A. A. A. constituted. The truth is not pleasant, but it is well that it should come out. This is it; and there is not a man who dares say to the contrary.

In passing, it may be remarked that the organization that does not control racing has no handicapping fees and few other pecuniary favors to dispense.

Where the Blame Rests.

It is not pleasant to believe that an excess of publicity and popularity have gone to such a level head as that possessed by Winthrop E. Scarritt. It is not possible, however, to escape the unpleasant suggestion when he publicly urges the revocation of the automobilist's right to use the public road as a means of subduing the scorching evil.

Mr. Scarritt's suggestion is unfortunate, as it will undoubtedly serve as a strong peg upon which much undesirable legislation may be hung. If rights are inherited, few, if any, are more precious than the right of the freeman to use the public roads in a vehicle of his choosing; and this right is inherited. We believe it is irrevocable, and that it will be so proven on the first occasion it is put to the test. It cannot be clouded or affected by the hue and cry of the multitude or by the offences of the few. It is a right that should be preserved at every cost.

So far as concerns the State of New York, there is ample legislation now on the books for all purposes. It covers practically every point, and, properly and vigorously applied, it is quite sufficient to subdue the worst terror of the road.

So far as concerns New York City, the magistrates, who are given to delivering speeches whenever an automobilist is brought before them, are entirely to blame. On not one occasion that we can recall have they applied the limit of the law, or even the "second gear," so to speak. Despite their scoldings, their dispensation of justice has in the main been tempered with mercy—too much of it, perhaps. If they scolded less and appeared less anxious to see themselves quoted in print, and brought the law to bear more hardly it would cover every point.

The mental attitude of these magistrates was never better illustrated than by an incident which occurred in one of the city courts within the last month. At the offending chauffeur who was brought before him the learned judge hurled this question:

"What would you do if you saw a crowd of people at a street crossing?"

"Apply my brakes," very naturally responded the chauffeur, which is exactly what 999,999 out of 1,000,000 men would do.

"You would do nothing of the sort," retorted the magistrate; "you would run into the crowd."

It seems to afford these lower tribunals more satisfaction to deliver themselves in this fashion than to really vigorously enforce the law.

Perhaps the most flagrant offence in which an automobile has been involved was that in which an aged countryman was knocked from his wagon on the road, inside the limits of New York, by a chauffeur indulging in a midnight carousal in his employer's car and without the owner's permission. The chauffeur had not the common courage of a dog, and left the victim lying at the side of the road, where he was found at daylight wrapped in a blanket. His life hung in the balance, and, though he recovered, his injuries are such that they will affect him for life.

The public prints were filled with righteous denunciations of the coward, and the Automobile Club of America was moved to offer a reward of $100 for his arrest and conviction.

The incident served to open the floodgates of condemnation of automobiles generally. What was the outcome? The detectives, who devoted themselves to the task of running down the perpetrator of the cowardly deed, performed their work well. They practically secured a confession from the man himself. They certainly obtained witness aplenty. There were seventeen of them in court when the case was called for trial. Two of them were heard, and the prisoner was promptly discharged. When the chief detectives in the case sought to say a word he was abruptly ordered out of the presence of the court.

The case was so flagrant that the Motor World tried to get at the bottom of the miscarriage of justice. It seemed only too plain that influence had been brought to bear. Our investigations went so far as to prove that there was scarcely a reasonable doubt but that the right man had been apprehended. The detectives and witnesses were ready to swear to it. The magistrate himself was the one man who held the key to the solution. He fell ill about the time the Motor World had builded up its case sufficiently to place it before him and to try to "draw him out." Three separate endeavors to see the invalid were unavailing. His death put an end to it all.

The instance is a typical one. The chauffeur in question was the employe of a prominent man, and, though he deserved no mercy, he obtained it in unjust measure. He was not a rich automobilist, about whom the public prints prattle as being the chief defiers of the law. In fact, it is notorious that it is not the rich man, but the humble chauffeur, who is the most notorious offender. A number of them have been arrested three several times, but not one of them has been given the limit of the law nor even the limit of the fine that it is possible to impose.

If there is any blame for the state of things; if, indeed, the hue and cry which has been raised has not been due wholly to unreasonable fear on the part of the populace, inflamed by the newspapers, the blame rests, as we have said, with the magistrates, and with no one else. There is no reason for further legislation. There is no reason under the sun for revoking a man's right to use the public highways. As long as he is at liberty he should be free to use them lawfully, and when and where he will.

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Floodgates of Automobile Legislation are Opened.

Indiana Defeats an Odor-ous Amendment.

The advocacy of the Crumpacker Automobile bill by the members of the upper house of the General Asembly in Indiana on last Wednesday afternoon gave rise to an amendment that, if carried, would have been disastrous to the intents of the bill. Skilful jockeying of phrases, however, eliminated the dangerous provision, and the bill became a law by a vote of 44 to 2. The Senators voting in opposition to the bill were Thralls and Durre.

Before the final vote was called for an amendment was proposed that empowered county officials and road commissioners to make arrests of chauffeurs of cars that give out an obnoxious odor of gasolene, but this amendment was promptly thrown out and the bill passed as read.

Senator Crumpacker's bill, as outlined in last week's Motor World, provides a speed limit of eight miles an hour in the business sections of cities and towns, fifteen miles for other parts of a municipality, and twenty miles on country roads. Every car must be licensed with the Secretary of State, and numbers not less than five inches in height must be displayed at all times. The registration fee is $1. A white light in front and a red light behind must be shown between one hour after sunset and one hour before sunrise. On signal from the rider or driver of a horse which has become frightened the car must be stopped until the animal is under control. If necessary to quiet the animal, the engine must be stopped.

Three Bills in Minnesota.

Three automobile bills are now pending in the Minnesota Legislature, all of them making for mischief.

Senator Thompson apparently got hold of a copy of the old and mischievous New York law, since repealed, as his bill embodies its silly provisions requiring that no automobile is to pass a horse, foot passenger or domestic animal at a speed over eight miles an hour, nor pass any schoolhouse between the hours of 8 a. m. and 4 p. m., nor any church on Sundays, nor within half a mile of any postoffice faster than eight miles an hour. A provision is made for the registration of the number of every car with the Secretary of State on payment of a fee of $2. The penalties range from $50 to $100. The bill empowers county commissioners to fix their own speed limits and to make "general rules" —latitude that will result in chaos.

The other two bills were introduced in the House by Assemblymen Kelly and Thundale, respectively. The principal changes proposed by the Kelly bill are that an automobilist must slow down to five miles an hour when passing a horse, and that the number of the car must be printed on both sides of the car in numerals at least 4½ inches high. Thundale's measure is similar to Thompson's, excepting a clause which provides for the repeal of the present law.

New Hampshire May Fix $3 Fee.

Representative Samuel Couch, of Manchester, is the author of New Hampshire's automobile bill, which is now pending in the legislature of that State and which is practically a reproduction of laws now in force in the other New England States. It requires that all machines be registered in the office of the Secretary of State, for which a fee of $3 will be charged. It specifies that a car must not be run at a greater rate of speed than twenty miles an hour on the country roads and ten miles in towns. On approaching a crossing the car must be slowed up. Each machine must be fitted with an adequate brake, a muffler and a horn or bell. Speed must also be lessened when passing a horse drawn vehicle. Persons convicted of violating any of the provisions of the act shall be fined $20, and on the second conviction be fined $50, and on the third conviction be fined $100 or be imprisoned not exceeding thirty days.

California Senator Wants Badges Worn.

Senator Charles M. Shortridge, of Santa Clara County, Cal., has declared against automobiles, motor bicycles and steam road rollers; not declared absolutely that the space eliminators and the stately ironers of the roads must be abolished, but rather that all such vehicles be regulated as to speed and identification. The details of Shortridge's idea are embodied in a bill which the Senator from Santa Clara introduced in the upper house last week. The bill meanders through quite a volume of closely typewriten vellum pages, but the gist of the measure is that each county shall see to the regulation of the speed of all automobiles, motor bicycles and steam rollers, and that each chauffeur must be licensed by the State and wear a badge on his coat like a policeman.

The rate of speed to be allowed is to be determined by the various boards of supervisors of the various counties, and is to be computed according to the use of the roads by horse driven vehicles and by the population bordering on the roads. The result of such computation is to be printed and posted at intervals of every quarter mile in a conspicuous place along the roads.

Instead of the usual method of licensing the car, the chauffeur must be licensed, and, besides the badge worn, the number must be displayed on the body of the car and on the lamps. The violation of any sections of the bill Shortridge would have punished by a fine of not less than $100 nor more than $250, or by thirty days' imprisonment. In case of inability to pay the fine the magistrate before whom the case is tried may hold the automobile until the fine is paid.

Tinkering in Massachusetts, too.

Automobilists in Massachusetts will find their presence greatly needed at the various committee hearings of proposed amendments to the existing automobile law. The bill, No. 759, relative to the speed at which automobiles may be operated on the public roads, was given a hearing last Thursday, and counsel for certain egotistical Massachusetts gentlemen, who firmly believe in the incarceration of all automobilists, attended the hearing and quite naturally expressed themselves feelingly on the subject.

Thornton K. Lothrop, who would place automobilists in the same class as common drunks if he could be the ruling power, proposed that the penalty clause of the automobile law be modelled after the drunk law; that on the first offence the offender shall go free, the second offence shall be punished by a fine, and the third infraction shall mean imprisonment. The only change would be the omission of the fine stage, so that there would be only two stages in the "downward progress" of the transgressor.

In this bill the Highway Commission desires to have its judicial powers increased; to have a registration terminated with the transfer of ownership of an automobile; to prohibit all but Massachusetts numbers on a car, and bring all foreign machines within its power; to retain power to revoke a manufacturer's or a dealer's certificate of registration, and to give novices an opportunity to learn to operate a car without breaking the law. At this hearing no objections to the proposed amendment developed, but it was made plain that a number of influential citizens will make a strong effort to change the penalty clause of the bill. It is desired to amend the law so that the Highway Commission must revoke an operator's license or certificate if he has been twice convicted of overspeeding. Then, if an unregistered machine is operated or an unlicensed chauffeur operates a car, it is desired to make the punishment of the owner a sentence of thirty days or more in jail.

The hearing on this matter was not concluded, but after the horse owning members of the opposition had talked themselves hoarse in denouncing automobilists the presiding officer graciously announced that the hearing would be continued Friday, February 14.

Besides the continuation of the hearing of the above bill, the committee will take up

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another bill proposed by the Highway Commission. This measure is based upon the recommendation in the annual report of the commission that it be given the right to further regulate speed on certain highways upon petition of interested parties, increasing it on some roads and decreasing it on others. This bill will undoubtedly be supported generally by automobilists, as there are many open, straight stretches of roads in the country where a higher rate of speed than is now permitted would be absolutely safe, although, as a matter of fact, the passage of this bill would merely mean the legalizing of a practice that now exists and has been in vogue for several years.

The other matter to be considered on this eventful day is the bill relative to the speed of automobiles, which reads as follows: "The gearing and other mechanical devices used for transmission of power from the engines of motors of motor vehicles shall be so arranged that the speed of said motor vehicle cannot exceed that permitted by law."

This provision is akin to the one now pending in the New Jersey Legislature, and is, of course, as impossible of enforcement. As one observer pointed out, a car with gearing capable of developing fifteen miles an hour necessarily would be under the ban of the law if run in places where the speed limit is ten miles an hour, or on park roads, where the limit is eight miles.

Delaware Hears a Jester's Bill.

Representative Jester, of Delaware, has introduced an automobile bill in the legislature now in session at Dover which befits his name, although some clauses of the act seem reasonable enough. The Representative must have copied his measure from the Pennsylvania law, for the bill contains terms and legal expressions peculiar to Pennsylvania that could not apply to Delaware. For instance, it provides that certain forfeited bail shall revert to overseers of the poor in various "townships" in which the money shall be forfeited. Provision also is made for appeals to the "Courts of Common Pleas." If the truth be known, there are no townships or Courts of Common Pleas in Delaware, but the townships are designated as "Hundreds."

Stripped of its verbiage, the act provides that all owners of motor vehicles must file a declaration of competence to drive the machine, in the office of the Secretary of State, together with a description of the automobile, the name of the owner, etc. A registration fee of $1 is required to be paid to the Secretary of State, for which a license shall be issued, and no further license or permit shall be required. This applies to all owners of automobiles in Delaware and to non-resident automobilists passing through Delaware.

This feature of the bill as now drafted, however, will need amending some way. Thus a tourist on his way from Chester, Pa., for instance, to Elkton, Md., a distance of only about thirty miles, would be unable to pass through Delaware without first having taken out a Delaware license.

On each automobile the license number shall be displayed on a tag with numbers three inches in height. Each machine shall carry two lights, capable of throwing rays two hundred feet, and on each lamp shall be marked the signal numbers one inch in height. Each machine shall have an efficient brake or brakes and a horn, bell or other signal device.

Speed limits are set forth as follows: In "town, township, hundred or village" where houses are more than one hundred feet apart, a speed of one mile in six minutes upon the sharp curves of a street or highway. A speed of one mile in seven minutes where such street or highway passes through the built up portion of a "city, town, township, hundred or village" where the houses are less than one hundred feet apart. Elsewhere, a speed of one mile in three minutes, provided that nothing shall be construed to permit an unreasonable speed. Any person driving an automobile on any public road, street, driveway or parkway on a bet or wager, or in a race, shall be fined, not exceeding $50 or imprisoned not exceeding twenty days.

Penalties prescribed are as follows: For failing to secure a certificate or license, $50 fine; for failing to display the license tag, $15; for failing to carry proper lights, signals, etc., $10; for exceeding the speed in towns and on sharp curves and intersections, $25; for exceeding the speed in built up sections, $25; for exceeding the straightway speed limit, $50; for failing to stop the car when signalled to do so, $10, or in default of any of the above fines imprisonment not exceeding ten days. For a second conviction for excessive speeding, instead of a fine, imprisonment not exceeding ten days shall be imposed.

Hayseed Influence Takes Form in Wisconsin.

If the number of automobile restriction bills introduced at this session of the Wisconsin Legislature is any criterion it is likely that the regulation of automobiles will be the principal issue before that body. At least this subject has so far received more attention than any other, and from present indications there will be an avalanche of measures having the control of automobiles in view before the session adjourns.

Speaker Lenroot, of Superior, introduced by request of a farmers' grange a bill regulating the speed of automobiles in rural districts. Between the hours of sunset and 10 o'clock at night the speed of automobiles is not to exceed four miles an hour, while at other times of the day it is not to exceed eight miles an hour. Whenever an automobile approaches a horse or team on the highway the chauffeur must stop until the horse driven vehicle passes. The penalty for violations is a fine of from $10 to $100, and justices of the peace are to have jurisdiction.

Assemblyman John Thomas, of Racine County, introduced a measure in the House which provides that no automobile or other similar motor vehicle shall be allowed on the highways of the State unless it shall have first been registered with the Secretary of State, and he thinks the license is worth $10. Numbers must be attached to the car in a conspicuous place, and each machine must be provided with brake, bell or horn. The speed provisions of the measure specify that within the corporate limits of cities the speed shall not be greater than eight miles an hour, fifteen miles on country roads and eight miles within half a mile of any postoffice. No person under eighteen years shall be allowed to operate an automobile. The most exotic portion of the bill is that which will compel the engines of cars to be stopped when passing any horse, which means that no automobile will be able to run in cities or towns where horses are common. For violation of the law the punishment shall be, for the first offence, a fine of $50 or imprisonment in the county jail for thirty days, or both, at the discretion of the magistrate; for each subsequent offence a fine of not more than $100 nor less than $50, or imprisonment in the county jail for sixty days, or both.

Assemblyman Turner's bill provides a $2 registration fee, otherwise it is the same as the Thomas bill.

Apologizes for Texas' Bill.

In Texas all Texans obey the law! It is only the mean fellows who come from other States who offend it. At any rate, this is the substance of what Assemblyman Hall stated last week in apology for the automobile bill he then proceeded to introduce.

"There are many automobiles in this State, but the parties who own them are careful, considerate and humane men and take particular care to avoid frightening teams," he said. "Therefore this bill does not necessarily apply to them, but to pleasure seekers from other States, who are not so solicitous of the public's safety."

Section 1 of the bill provides that it "shall be unlawful for any person or persons, with the exception hereinafter named, to drive, speed or operate any automobile, motor car or racycle, or any motor vehicle of any kind, whether any such automobile, motor car, racycle or other motor vehicle be used as a public hack, truck or for hire or for private use, for pleasure or business, except railway locomotives and electric cars, upon, across and over the public roads of this State in such a careless, reckless and wanton manner as to endanger the life, person or property of any other users of such public places."

Section 2 states that automobiles must stop on meeting any teams drawn by horses, mules or oxen if the animals appear frightened, and remain at a standstill until the animal drawn vehicle has passed.

The other three sections of the measure relate to lamps, registration and penalties. All motor vehicles shall carry two lamps in front, except motor bicycles, which are required to carry but one lamp. A permit must be obtained from the county clerk, and on payment of the fee of $1 he will issue numbers, which must be displayed on the rear of the vehicle. Numbers are not allowed to be transferred or loaned to another person. Any person violating the law shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than $10 nor more than $100.

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BEST OF LOCAL SHOWS

New York's Skimming of the Cream Leaves Chicago Bereft of General Interest and Little that is New Comes to the Surface—A "Negro Lady" the Feature of the Show.

Chicago, Feb. 6.—After New York, the Chicago show—but how very much after, neither the geographical distance nor the interim of a few weeks adequately accounts for.

UNREADINESS AGAIN THE RULE.

Despite the fact that a large percentage of the exhibitors are nearer Chicago than New York, the doors were thrown open Saturday afternoon on a woefully incomplete and forlorn-looking aggregation of cars, such was their isolation in some instances. It was further noticeable that those most distant were the first to show completed exhibits. The more or less deserted appearance of the floor, coupled with the incessant din of many hammers and saws, lent their attractions to the scene, in spite of which the attendance on the first afternoon and evening was large—some twenty to thirty per cent. in excess of last year's introduction.

None the less, the Chicago show is a great big thing—for Chicago—and as everything is comparative, it can only be regarded in this light with a none too sparing use of the kindly veil of charity.

It is, in short, much in the same category as the Philadelphia affair and the many lesser lights that follow it—a matter of great interest to the local fraternity and to the Chicago public in general—but, on the whole, a largely local dealers' and agents' show, the makers, in the majority of instances, leaving their interests in the hands of their representatives in this vicinity.

With the cream so well skimmed off by Gotham's priority, as well as superior claims to importance, Chicago must perforce take second place, and the management has not only made the most of its opportunities in the matter, but produced something that few have regretted to see go down in history with each passing year of the four as "The Chicago Show."

THE QUESTION AND THE ANSWER.

Stone throwing is a luxury that few can afford, particularly when the missiles partake of the nature of the boomerang, so that expression on the part of prominent exhibitors of the show, as a whole, is guarded. The question, "Well, what do you think of it?" usually meets with a quizzical look on the countenance of the interviewed, and a broad smile is the natural outcome when glances meet.

The favorite answer to this pointed interrogatory is, "It's the Chicago show," at once brief, to the point and all embracing, it admits of no further questioning.

When the doughty manager who lords it over the Coliseum and all and sundry therein during show week, first assumed the office, his guiding star and fast set purpose was the automobile, its advancement, and with it the advancement of the interests of all concerned, first, last and all the time. But has any one ever doubted the potency of the automobile, whether in its freak coddling clothes of half a decade since, or in its present state of glittering, polished brass and steel perfection, as an attraction? Nor should they. Then, why, oh, why, in attempting to make the best of his opportunities, does he persist in trying to belittle man's most perfect mechanical achievement by methods purely Chicagoese—ringing in cheap vaudeville—and as what? An attraction? Save the word.

WHEN THE COLORED CONTRALTO "OBLIGES."

To quote one of Chicago's dailies: "The vaudeville show provided by the management will be something pleasing this year. Soloists have been engaged to entertain during the evening. Among the soloists is Miss Albert Benson, a local contralto," and likewise a lady of color."

What next? A cakewalk? How low are the mighty fallen that the monarch of the road should need the quavering strains of a dark contralto to beguile his admirers to the Coliseum or to keep their attention on such fine points as frames and suspension, ignition and carburretion while there.

In the opinion of one of the exhibitors, delivered in a tone well calculated to voice his disgust, "Why not place tables all along the aisles, ring in some more song and dance, serve beer and be done with it?"

No continuous performance other than that afforded by the shining rows of exhibits themselves was necessary to fill Madison Square Garden every day in the week from 10 a. m. until so late in the evening that spectators had to be driven away. Is the Chicagoan a different breed that he must needs have everything a la music hall?

FLAGS THE CHIEF DECORATION.

Another noticeable difference between the New York show and this, its attempted duplicate, is that in the former the exhibitors provided all the decorations and used them for their own benefit—mirrors, trellis work, potted palms and the trained hand and eye of the professional decorator lent an aesthetic air to something otherwise purely mechanical—here, with one or two exceptions, the exhibitors have left this entirely to the management, which has provided a profusion of flags, which, if nothing else, are at least well out of the way up under the roof.

The Rambler, with a more complete exhibit in that room to show two additional cars, or five in all, is available; the Peerless, with the Green Dragon, of Oldfield fame, as the piece de resistance; the Electric Vehicle Co., with its usual very complete showing of all its products, flanked across the aisle by an equally attractive exhibit of the Pope Motor Car Co.; the Royal Tourist, Cadillac, Packard, Autocar, Elmore, Thomas, Woods, Winton, Haynes, Olds, Pierce Arrow, Locomobile, White, Stevens-Duryea, and a few of the other old stand-bys who have formed the bulk of every show predominate the centre of the main floor, the Apperson and Knox exhibits being the first to greet the visitor as he comes in the door. Some of the junior entrants into the fold, not requiring so much space, are ranged around the walls between the abuttments of the arches, while the lesser lights and, unfortunately, some not coming under the head of "also theres" have perforce been relegated to the annex, the second floor of which, where the accessory dealers are housed, would do credit to a Chicago department store, its arrangement is such an excellent imitation of the latter. And one and all of the gentry who handle everything under the sun in the way of parts were howling long and loud at being compelled to exhibit in semi-darkness, as the only lighting provided was in the shape of a few rows of incandescent lamps close to the high ceiling.

FEW FOREIGN CARS IN EVIDENCE.

Besides being a local or neighborhood show, so far as interest is concerned, the Chicago exhibit is now an almost purely American show, and a view of the limited—one is tempted to characterise it as mean—display of the three lonesome foreign firms who have had the hardihood to have their agents exhibit, besides those of the leading domestic builders, would cause the gentlemen from over the water to open their eyes and think there was something doing in the way of an American automobile industry, after all. The Renault, represented by a solitary chassis stuck in an alcove to one side of the passageway between the main floor and annex, and two German makers complete the list, and only the last, with three complete cars, made much of an attempt at an exhibit. There was a Mercedes car also, but no one knew it as such, as, topped off by a body in the rough, it was only there to exploit the builders of the latter, C. P. Kimball & Co., of Chicago.

Of the cars not seen in New York, the Woods, a new departure in the shape of a 40 h. p. gasolene car, is now being placed on the market by the Woods Motor Vehicle Co. This has a 4 cylinder vertical engine, 5x5, with mechanical valves, both placed on the same side, thus reducing the gearing and cam shafts necessary to a minimum. A 108-inch wheel base is used, the wheels running on imported ball bearings. High tension, with two sets of accumulators, is employed, and the builders have followed acknowledged standards of superiority throughout in designing a car with which to enter the gasolene field. At present but two bodies are being put forward, the tonneau, at $4,250, and a very elaborately finished limousine, at $5,000. This company is also showing a novelty in the form of a light electric runabout, equipped with a 8 h. p. motor, suspended directly beneath the centre of the vehicle and with a direct drive through bevel gearing.

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The Dolson is another Western product, the makers of which pin their faith to the horizontal opposed engine. And about this motive power, rated at 20-24 h. p., they have constructed a very neat and serviceable looking tonneau to sell at $1,500. Planetary transmission with chain drive is employed, a special feature of this car being the method of spring suspension employed, which is said to reduce the force of jolts and shocks transmitted to the frame and engine to a minimum.

The Jackson is the product of another Western maker, the Jackson Automobile Co., of Jackson, Mich., and is the outcome of experience with steam and gasolene extending over several years. The first Jackson produced in 1901 was a steam runabout to sell at $850; the next a steam Stanhope, at $1,000, and after that a 3 cylinder compound engine, driving a car for four passengers, at the same price. Then steam was given up for gasolene, and a single cylinder gasolene runabout at $650 was put forward. From the last it has been but a matter of improvement and increase of power to the double opposed cylinder touring car at $1,250 that now bears the Jackson standard.

TWO ATTRACTIVE WESTERN CARS.

The Royal Automobile Co., of Chicago, is the title of an entirely new comer in the field to manufacture a line of both electric and gasolene machines. In the former they display runabouts, phaetons, Victorias and Stanhopes, all equipped with the "Imperial" motor of their own make. One of these motors is located directly inside each rear hub, and drives the wheels independently through a double reduction gear. Dismantled, there are scarcely half a dozen parts to each, and they form a very compact and entirely self-contained driving unit. On the runabout, listing at $650, a single motor, located in the centre of the rear live axle, is used. In the "Royal Princess," a gasolene touring car, the standard horizontal opposed engine and equipment are combined in an exceedingly neat touring car, listing at $1,600, complete with top.

The Richmond is a four vertical cylinder air-cooled car, named after its birthplace in Indiana. It combines a number of good features usually only found on much higher priced cars, although it sells at $1,750. Its design is evidently the result of careful study to produce the best possible tonneau car to sell at this price.

USES ALUMINUM WATER JACKETS.

The Hammer is a comparatively new arrival, hailing from Detroit, in which the four cylinders are cast integral without the water jacket, thus permitting of critical examination of the casting in the first instance and investigation in case of cracking. The water jacket is also a single casting, but a departure is made by employing aluminum for this purpose. The makers consider this feature of such value that applications have been made for patents. Other noteworthy features are interchangeable valves and concealed cam shaft and rollers. The latter are in the upper half of the aluminum crank case, with the crank shaft, and thus the complete engine presents an aspect of extreme simplicity. The same careful attention to detail has been observed throughout, and the result is evident in the completed car. The 24 h. p. touring car is priced at $2,500, and the limousine, with 32 h. p., at $4,500.

The A. C. Banker Co., of Chicago, of former agency fame in this city, have turned manufacturers and are now putting forth a four cylinder high powered car of standard design, which will doubtless serve to make them better known as builders in the future than they have been as representatives in the past.

IOWA'S SENSATION IN EVIDENCE.

The Adams-Farwell car, with its three cylinder rotary motor, built by the Adams Co., Dubuque, Iowa, is shown publicly for the first time, and seems to bear out the promises contained in the detailed description published in the Motor World several months since. There is no one feature that it possesses in which it cannot lay claim to being unique, and the manner in which the operations of the usual four cycle motor have been adapted to its very unusual conditions is well worked out and apparently fulfills in practice what its designers claim for it. Neither the idea nor its application to the internal combustion motor is new, but no previous attempts have survived the test of every-day working. The motor revolves about a heavy bronze stationary crank shaft, transmitting its power through gearing. Fuel is mixed in a chamber directly over the crank shaft, the carburettor, which is simplicity itself, being fed by an automatic gasolene pump, surplus liquid running back to the well of the latter. The fuel level is always constant, and the air suction simultaneously opens the gasolene intake proportionately. Each cylinder is provided with channels cast integral and communicating from this central full chamber to the intake, a supply being drawn in as it passes the ports in former during a part of each revolution. The engine is mounted directly over the rear axle, and its transmission gives four speeds ahead and reverse. As fitted to an enclosed coupe body, with folding front seat outside, control may be had from either in or outside by merely shifting the starting levers and pedal entire—the work of a few moments. In addition to its being of the rotary, no flywheel type, its chief feature is the speed control accomplished by varying the compression.

The Moline Automobile Co., Moline, Ill., have branched out with a standard four cylinder car, embodying some special features of their own, as have also the builders of the Marble Swift, a Chicago concern, while a new $500 runabout—the Monarch—is a new comer claiming attention in the lighter class. This is equipped with a 7 h. p. single air-cooled cylinder of standard design, and the car is throughout fitted with accessories and parts seldom seen on anything at the price.

ACCESSIBILITY A FEATURE.

R. Harry Croninger, general sales manager of the Dayton Motor Car Co., is showing the Stoddard line, one of the few exhibits in charge of the home office. The factory has made good by having everything ready in good time for the show, so that the new Stoddard is well represented. It follows standard specifications, except where they have been improved upon, and this is particularly so in the matter of accessibility and attention to detail, only single piece forgings being used throughout and every nut being locked in place.

Of all the cars to be seen in the entire show the Holsman can probably lay claim to the unique distinction of having adhered closer than a brother to standards of a decade ago, where running gear and body construction are concerned. The horizontal opposed double cylinder, air-cooled motor is so very carefully concealed that both the buggy and double-seated wagon—tonneau, rather—lack not a thing but shafts to need a "git ap" motor under a sunbonnet in front. They are of the type of first horseless vehicles which impelled the Chinaman to the exclamation, "No pushee, no pullee," etc. In the more ambitious tonneau, which no barnyard nag would fail to recognize, the gasolene tank in front is neatly made to simulate a trunk, with the aid of black enamel and real leather straps.

NOVELTIES IN ACCESSORIES.

In accessories and improvements in parts and construction there is the usual profusion of new ideas and devices sufficient to keep the local talent rubbering and studying for the week in making the rounds to take them all in. And it is in this respect that the local trade, as well as accessory and parts manufacturers, within a radius of several hundred miles, are most strongly represented. With the exception of E. J. Willis & Co., with their usual complete showing of everything under the sun, C. F. Splitdorf, with a display of what vibrator coils should be, the remainder of accessory exhibitors, with some exceptions, are local. Then some of the Eastern makers, such as the American Electric Novelty Co., show through their agents, while others are scattered in different parts of the gallery. The National Carbon Company's booth, showing "Miss Fire" with sparking eyes, drew the crowd in the latter direction.

But the main accessory room affords one of the surprises of the show. It contains an exhibit of bicycles, pure and simple. This is the Excelsior, shown by the Excelsior Supply Co., of Chicago, one of the few concerns that in going in for everything for the automobile have not let the wheel go by the board, but still do a large business in bicycles.

CARRY YOUR OWN SIGNALS!

The nature of some of the devices indicate that the fool killer might find something to do out in this direction if he had any time to spare in the East. One of these is a signal

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device to be worked by the man at the wheel. He pulls a lever, and, lo! presto! a red or green shield drops over either the port or starboard bright light to show the timid pedestrian which direction the "shover" is going to turn the car, and thus safety is assured. But what's the use of going any further in this direction; every show brings forth its crop.

The Remy high and low tension magnetos, made by the Remy Electric Company, of Anderson, Ind., and patterned after the best types of foreign machines, but with the advantages of interchangeability and standardization, are well represented. The manufacturers of these machines have come to a realization of the fact that the toy magnetos shown in past years by makers bidding for this trade are worse than useless, and, furthermore, that a good magneto, particularly with synchronous distribution, cannot be turned out to sell at a nominal figure. That their efforts in the right direction are appreciated is evidenced by the daily increasing number of makers adopting their system.

TO THWART THE THIEVES.

Lock switches and more lock switches to prevent the car being stolen. Neatly made and practical looking devices, such as the B. & J. and the Autolock—good preventives of the meddlesome small boy, but it is to be feared that the crook who is wise enough to know how to steal a car will laugh at the locksmiths. Then tire pumps, the "pump-while-you-ride" kind, of which the Hibbard automatic, put out by McCord & Co., and readily attachable to any of the wheels as an example are here. Another aid to tires in this direction is a "boil preventer," more prosaically known as a tire shield, and made by the Chicago Raw Hide Co. Of course, it's not the only one, but its makers claim that stout rawhide has leather and rubber shields faded when it comes to real service. It makes a fine surgical bandage for the tire that has suffered to the extent that its "innards" are protruding.

Then there are spark plugs and spark coils, and but one of each that differs at all, the former merely another of the now familiar magnetic type, which no builder of cars has apparently ever adopted, and the latter a "duplex" coil—two complete coils in series operating one vibrator. Increased speed of the latter is the advantage claimed for the arrangement in question, the armature being made extra long and is attracted by the two cores.

The Lehman universal joint, which has been improved since the New York show by the addition of a brass casing to exclude dirt, is attracting an unusual amount of favorable attention through its extreme simplicity and effectiveness for the purpose in view, as it operates equally well at any angle up to 90 degrees. It has been further improved by adapting it to use with the sliding shaft now specified on the majority of direct drive, high powered cars. Three drop forgings and a heavy steel ball complete the entire joint, and by the use of the latter are embodied, practically, every well known scientific principle of this form of joint known for ages through their frequent occurrence in nature, but in a form that is simplicity itself. The use of the ball centralizes the parts, even should its bearings become badly worn.

EXHAUST TO GENERATE ELECTRICITY.

What with utilizing the exhaust to warm the carburettor, blow the horn, pump the tires and warm the car in winter, every ounce of power generated will soon be used to the extent that the stock yards do with the pig—everything but the squeal. The latest device to take advantage of the waste heat of the exhaust is the "Thermo Electric" generator, which actually serves two purposes at once, in that it forms a component part of the muffler. The thermopile depends for its action on the difference in temperature of the ends of its members, composed of differing metals, and in the present instance this is accomplished by building it in connection with the muffler, so that the inner ends are heated by the exhaust, while the outer extremities are cooled by air drawn in around them by injector action. The standard muffler size of this pile will generate 1½ amperes at 10 volts, and starting on the battery will begin to deliver current in three to five minutes.

DEPARTURE IN DIFFERENTIALS.

Hedgeland's "anti-skid" axle and "double driving clutch" is a departure in differentials which looks promising. When at rest the disk comprising its driving member is in the neutral position, and the wheel itself is free to revolve. The disk in question moves out or inboard on a worm actuated by and on the axle itself, and its motion engages the slotted faces of the inner or outer disks, which determine the direction of travel. Should the wheel travel faster than the disk, it will run free, and this is where the differential action comes in, as rounding a corner the outer wheel runs free and the inner one is driven or the reverse of the usual differential gearing now employed.

Where purely mechanical devices are concerned, and particularly when the size of its exhibit is considered, the Wattuck transmission, which caught the trained eye of the Motor World man at New York, came in for an unusual share of attention, which, from the daring novelty of its conception, it well deserves. Its performance when applied to a car will doubtless be looked forward to by many.

The Kingston carburetter, the advantages and reliability of which are already too familiar to call for remark, was well represented, as was also the "Daley," a Chicago product, made by Walter A. Daley.

HERE'S AN UNUSUAL MOTOR.

In engines the Twentieth Century is an interesting departure. It is a combined two and four cycle, three cylinder motor in one, the transformation being effected while running by merely shifting a lever which operates a shaft provided with a double set of cams—one for each phase. Its chief claim to distinction is variable horsepower at any time without change of speed, eighteen horsepower on four cycle and thirty on two cycle, the cylinders being fed by the same carburetter and mechanical inlet and exhaust valves at all times.

Where tires are concerned, the makers monopolized a large part of the gallery and made effective exhibits. Goodrich and Morgan & Wright products are prominent, as were also the Kokomo, and, of course, Hartfords, Dunlops, Diamonds, Fisks, G. & J.'s are very much in evidence.

Dunlop tires are represented on both sides of the gallery, and in each booth there is a rear wheel from the Columbia car holding the Chicago-New York record, showing how the tires withstood the wear and tear, "even to the original mud," observed a spectator.

Morgan & Wright have been quietly working on a new solid tire that is the invention of Dr. Bryant, and now, after exhaustive experiments and tests, they have demonstrated that it is the real thing in solid rubber, where resiliency, long life and non-skidding qualities are concerned, they are ready to drop on that branch of the trade like a ton of brick and get their share.

TIRE FILLERS AND DIRT REMOVERS.

Some of the incongruities of the show are to be found in the widely differing names and character of the products of some of the exhibitors. For instance, the Peerless Electric Co. makes tire filler and dirt remover "Cleanall," while the Chicago Motorcycle Co. doesn't make motorcycles, but cars.

"It's not a clam, though it shuts up like one," is what the Dayton Folding Tonneau Co. says of its device for instantly converting from two to four seats and vice versa. Besides this, they say that, "No man with marriageable daughters ought to be without one. It beats a short sofa," and they back this up with scripture in the original to prove it, so why describe it? Its the only one that has the last named recommendation, so it must fill the bill, and with such qualities is dirt cheap at the price, $100, to match any enamel and upholstery.

In the accumulator field those not seen at New York are the "Bestogo," made by the Miller Signal Co.; the Vesta, by the Vesta Accumulator Co., who are also marketing an ingenious device to charge sparking storage sets from house supply, and the Exmoor, as well as a line put out by the Chicago Storage Battery Co., operated by the Chicago Pneumatic Tool Works, and all of which have reached a stage of efficiency in long life and working power that renders the peculiar distinctions of each to claim attention worthy of investigation.

To sum up, the Chicago show is, in the main, a first-class neighborhood show, and, judging from the attendance and amount of interest manifested, there is little reason to doubt that all concerned will be pleased at the result in every way, particularly in dollars and cents, but mighty glad when it is

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over. It will go down in history as the biggest of the local shows.

The following is a summary of the exhibits and exhibitors:

Adams Co., Dubuque, Iowa, Space 100, M. F.—Adams-Farwell gasolene cars.

Auburn Automobile Co., Auburn, Ind., Space 142, M. F.—Gasolene cars.

Autocar Equipment Co., Chicago, Space 266, G. A.—Automobile trucks.

American Electric and Novelty Mfg. Co., New York, Space 291, G. A.—Electrical novelties.

Banker, A. C., Co., Chicago, Spaces 115 to 117, M. F.—Supplies.

Beckley-Ralston Co., Chicago, Spaces 307 and 308, G. A.—Supplies.

Borland, C. B., Co., Chicago, Spaces 317 and 318, G. A.—Accessories.

Chicago Caloric Engine Co., Chicago, Space 16, M. F.—Caloric engines.

Chicago Storage Battery Co., Chicago, Spaces 267 and 305 and 306, G. A.—Batteries.

Cullman Wheel Co., Chicago, Space 268, G. A.—Equalizing gears and sprockets.

Chicago Rawhide Mfg. Co., Chicago, Space 269, G. A.—Tire protectors.

Continental Engine Co., Chicago, Space 328, G. A.—Engines.

Dixon Crucible Co., Jersey City, N. J., Space 270, G. A.—Lubricants.

Excelsior Supply Co., Chicago, Spaces 272 to 276 and 282 to 286, G. A.—Supplies

Exmoor Storage Battery Co., Chicago, Spaces 319 and 320, G. A.—Batteries.

Mahoning Automobile Co., Youngstown, Ohio, Space 176, M. F. A.—Mahoning gasolene cars.

Hagaman & Hammerly, Chicago, Space 118, M. F.—Supplies.

Holsman, Automobile Co., Chicago, Space 115, M. F.—Holsman gasolene cars.

Hammer Motor Co., Detroit, Mich., Space 152, M. F. A.—Hammer gasolene car.

Hill Mfg. Co., Chicago, Space 264, G. A.—Bodies and canopies.

Kilfyre Co., Chicago, Space 144, M. F.—Fire extinguishers.

Knoblock-Heideman Mfg. Co., South Bend, Ind., Space 222, G.—Ignition apparatus and carburetters.

Kimball, C. P., & Co., Chicago, Spaces 277 to 279 and 287 to 289, G. A.—Bodies.

Kaestner, Chas., Mfg. Co., Chicago, Space 292 G. A.—Carburetters.

Long Mfg. Co., Chicago, Space 252 G.—Accessories.

Lauth, J., Co., Chicago, Space 304 G. A.—Supplies.

Limousine & Carriage Co., Chicago, Space 313, G. A.—Automobile Bodies.

Moline Automobile Co., Moline, Ill., Space 103, M. F.—Moline touring cars.

Monarch Automobile Co., Chicago, Space 113, M. F.—Automobiles.

Marble-Swift Automobile Co., Chicago, Space 175, M. F. A.Gasolene cars.

Motor Car Supply Co., Chicago, Spaces 298 and 299 and 321 to 323, G. A.—Supplies.

Merrill-Stevens Mfg. Co., Chicago, Space 315, G. A.—Standard automobile jack.

Remy Electric Co., Anderson, Ind., Spaces 218 and 219, G.—Ignition apparatus.

Stoddard Mfg. Co., Dayton, Ohio, Spaces 173 and 174, M. F. A.—Stoddard gasolene cars.

Standard Oil Co., Chicago, Spaces 191 and 192, G.—Gasolene.

Stolp Mfg. Co., Chicago, Space 248, G.—Cooler tubing.

Standard Carriage Lamp Co., Chicago, Space 281, G. A.—Standard lamps.

Star Remedy Co., Chicago, Space 314, G. A.—Puncture bands.

Tincher Automobile Co., Chicago, Space 143, M. F.—Tincher cars.

Vesta Accumulator Co., Chicago, Space 280, G. A.—Batteries.

Whitely Steel Co., Chicago, Space 21, G. A.—Parts.

Woods Motor Vehicle Co., Chicago, Spaces 30 to 32 and 46 to 48, M. F.—Electric automobiles.

Mead Cycle Co., Chicago, Spaces 147 and 148, M. F.—Benz gasolene cars.

Advance Packing & Mfg. Co., Chicago, Space 327, G. A.—Engine packing.

Automobile Supply Co., Chicago, Spaces 295 to 297, G. A.—Supplies.

Chicago Battery Co., Chicago, Spaces 305 and 306, G. A.—Dry Batteries.

Wayne Works, Richmond, Ind., Space 128, M. F.—Gasolene cars.

The following exhibited at New York, and will also stage their wares at Chicago:

Apperson Bros.' Automobile Co.—Apperson touring cars.

Autocar Co.—Autocars.

American Roller Bearing Co.—American roller bearings.

Acme Motor Car Co.—Acme cars.

Austin Automobile Co.—Austin cars.

Autocoil Co.—Coils.

Aurora Automatic Machinery Co.—Thor motorcycles and fittings.

Bartholomew Co., The—Glide cars.

Blomstrom Motor Co., C. H.—Queen cars.

Buick Motor Car Co.—Buick cars.

Badger Brass Mfg. Co.—Solar acetylene gas lamps.

Baldwin Chain & Mfg. Co.—Baldwin detachable and riveted chains.

Brennan Motor Co.—Brennan gasolene motors.

Bowser & Co., Inc., S. F.—Gasolene outfits.

Brown-Pipe Gear Co.—Gears.

Briscoe Mfg. Co.—Radiators and fenders.

Byrne-Kingston & Co.—Carburetters.

Cadillac Automobile Co.—Cadillac cars.

Coldwell Lawn Mower Co., The—Motor lawn mowers.

Cleveland Motor Car Co.—Gasolene cars.

Columbus Motor Vehicle Co.—Gasolene cars.

Concentrated Acetylene Co.—Acetylene gas and gas tanks.

Dolson & Sons, John L.—Dolson cars.

De Dietrich & Co.—De Dietrich cars.

Duryea Power Co.—Duryea cars.

Dayton Electrical Mfg. Co.—Apple dynamos.

Dietz Co., R. E.—Lamps.

Diamond Rubber Co.—Diamond detachable clincher tires.

Dow Portable Electric Co.—Spark coils.

Detroit Steel Products Co.—Steel specialties.

Electric Vehicle Co.—Columbia gasolene and electric cars.

Elmore Mfg. Co.—Elmore Pathfinder cars.

Electric Contract Co.—Electrical goods.

Ford Motor Co.—Ford cars.

Franklin Mfg. Co.—Franklin cars.

Federal Mfg. Co.—Frames, axles, gears, etc.

Firestone Tire & Rubber Co.—Solid tires.

Fisk Rubber Co.—Fisk mechanically fastened tires.

Gray & Davis—Headlight, side and tail oil and acetylene gas lamps.

Goodyear Tire & Rubber Co.—Goodyear detachable tires.

Goodrich Co., B. F.—Goodrich detachable clincher tires.

G & J Tire Co.—G & J detachable clincher tires.

Haynes-Apperson Co.—Haynes cars.

Hartford Rubber Works Co.—Perfected Dunlop detachable and Hartford and Turner tires.

Hartford Suspension Co.—Shock absorber.

Hardy Co., R. E.—Sta-rite spark plugs.

Hendee Mfg. Co.—Indian motorcycles.

Herz & Co.—Spark plugs, etc.

Hine-Watt Mfg. Co.—Lamps.

Hyatt Roller Bearing Co.—Bearings.

Imperial Wheel Co.—Artillery wheels.

Jeffery & Co., Thos. B.—Rambler cars.

Jones, Joseph W.—Speedometers.

Kirk Mfg. Co.—Yale cars.

Knox Automobile Co.—Knox cars.

Locomobile Co. of America—Locomobile gasolene cars.

Mitchell Motor Car Co.—Mitchell cars.

Marion Motor Car Co.—Marion air cooled cars.

Maxwell-Briscoe Motor Co.—Maxwell cars.

Model Gas Engine Works—Model gasolene cars.

Michigan Automobile Co.—Michigan cars.

Morgan & Wright, Inc., Chicago, Ill.—Morgan & Wright clincher detachable tires.

Motor Car Equipment oC.—Supplies.

Motsinger Device Co.—Auto sparkers.

McGeihan Odometer & Mfg. Co.—Odometers.

McCord & Co.—Oilers and pumps.

National Motor Vehicle Co.—National electric and gasolene cars.

Northern Mfg. Co.—Northern cars.

National Carbon Co.—Columbia dry batteries.

Olds Motor Works—Olds cars.

Oliver Mfg. Co.—Jacks.

Pope Mfg. Co.—Pope-Toledo, Pope-Hartford, Pope-Tribune gasolene and Pope-Waverley electric cars.

Peerless Motor Car Co.—Peerless cars.

Packard Motor Car Co.—Packard cars.

Pierce Co., The Geo. N.—Pierce Great Arrow and Pierce Stanhope cars.

Pierce Engine Co.—Pierce-Racine cars.

Pungs-Finch Automobile & Gas Engine Co.—Pungs-Finch four cylinder touring cars.

Premier Motor Mfg. Co.—Premier air cooled cars.

Pantasote Leather Co.—Leather coverings.

Pennsylvania Rubber Co.—Tires.

Pope Mfg. Co., New York City—Motorcycles.

Pneumatic Tire Protector Co.—Tire protectors.

Reliance Motor Car Co.—Reliance cars.

Royal Motor Car Co.—Royal cars.

Roche, Wm.—Autogas dry batteries, plugs, etc.

Reid Mfg. Co.—Wolverine cars.

Reo Motor Car Co.—Reo cars.

Steel Ball Co.—Hill oiler, Hill starter, etc.

Stevens Arms & Tool Co., The J.—Stevens-Duryea cars.

Stearns Co., F. B.—Stearns cars.

Shelby Steel Tube Co.—Seamless steel tubing.

Standard Welding Co.—Rims, tubing, etc.

St. Louis Motor Carriage Co.—St. Louis cars.

Standard Wheel Co.—Artillery wheels.

Sprague Umbrella Co.—Sprague tops.

Swinehart Cushion Tire & Rubber Co.—Swineheart non-puncturable cushion tire.

Smith Co., The A. O.—Frames, axles, gears, etc.

Splitdorf, C. F.—Splitdorf spark coils.

Studebaker Automobile Co. — Studebaker electric and gasolene cars.

Tokheim Mfg. Co.—Gasolene outfits.

20th Century Mfg. Co.—Lamps.

Thomas Motor Co., E. R.—Thomas cars.

Timken Roller Bearing Axle Co.—Roller bearings.

Union Automobile Co.—Union gasolene cars.

Veeder Mfg. Co.—Veeder odometers, tachometers.

Vehicle Equipment Co.—Electric vehicles.

Valentine & Co.—Varnishes.

Wheeler Mfg. Co.—Canopy tops and hampers.

Winton Motor Carriage Co.—Winton cars.

Weston-Mott Co.—Wheels, axles and rims.

Whitney Mfg. Co.—Whitney roller chains.

Warner Gear Co.—Gears..

Welch Motor Car Co.—Welch cars.

Wayne Automobile Co.—Wayne cars.

Wray Pump & Register Co.—Pumps and registers.

Warner Instrument Co.—Specialties.

Willis Co., E. J.—Supplies and specialties.

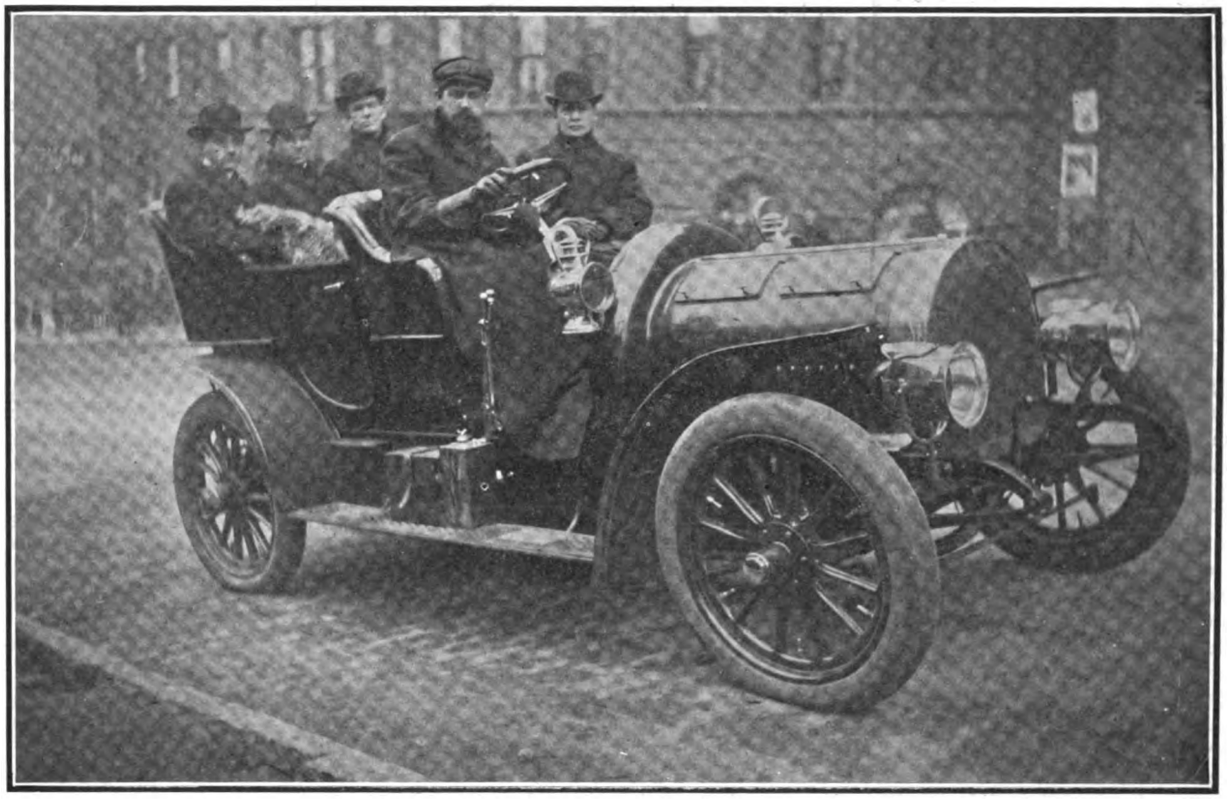
Waltham Mfg. Co.—Orient cars.

White Sewing Machine Co.—White steam cars.

Webb Co., The—Speed indicators.

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On New York's Most Famous Testing Ground.



"Duffy's Hill"—an excellent imitation of a precipice that adorns Lexington avenue, from 102d to 103d streets, in New York City—has come to be a regular testing out ground to prove the hill-climbing abilities of demonstrating cars. A few years ago it was considered a marvellous feat to surmount it at all. Now it is done on the high gear with a full complement of passengers, as is evidenced by the accompanying illustration, which pictures a Royal Tourist, with C. E. Duerr at the wheel, making light of it at full speed. Mr. Duerr says the Royal didn't have any more trouble with eight passengers, or a load of twelve to fifteen hundred pounds. Its grade is said to be 16 per cent., but to the average person in the trolley car, it appears dangerously like an almost vertical drop. A car that can chase up its bumpy block pavement like a Harlem goat shouldn't hesitate at anything.

Eleven Year Old Passes Examination.

Master Edward S. Esty, of Brookline, Mass., eleven years old, emulous of the success of a San Francisco boy, age fourteen, who holds an operator's license from the Park Commission of that city and ranks as the "youngest chauffeur" in California, appeared before the Massachusetts Highway Commission and asked to be given a license if examination should prove his fitness.

The courteous secretary of the board, A. B. Fletcher, put the lad through an hour's test in the 24 horsepower Peerless touring car belonging to his father, Clarence H. Esty, of Brookline, and the youngster proved himself its master. The route lay through the crowded Boston streets, and finally along the narrow, steep and icy ways on Beacon hill, around the Courthouse and Pemberton Square, and upon his favorable report to the commission the boy was granted a license on December 31, 1904. Edward was born November 27, 1893.

It is to be added that, while young Esty was but eleven years and thirty days old at the time of the test, he is larger and stronger than the average for his age, weighing 106 pounds and being 5 feet 3¼ inches in height, and that his knowledge of the automobiling art is not confined to guiding the car merely, but that he has an admirable insight into the working of all the parts, electrical as well as mechanical.

Why the Hayseeds Oppose Good Roads.

Just because good roads are conducive to automobiling, the irate hayseeds of Illinois, who have not sense enough, apparently, to come in out of the rain, are preparing to oppose Governor Deneen's proposal making for the construction of good roads in that State and thus "bite off their noses to spite their faces."

At present the automobile seems to be a red rag to the Illinois farmers, who will stand in their own light by opposing the building of more good roads. The Deneen idea does not contemplate any compulsion. It is what might be termed an enabling act. It gives the people the right to build a road if they want it, and it gives them the power to apportion the costs to those directly benefitted that is, the farmer whose land abuts the road, the county whose roads are for the public and the city whose trade would be helped.

Roads Opened to Californians.

The Automobile Club of California has scored a decided victory, one that will be a source of extreme gratification to all automobilists in that flowery State, and to all visiting enthusiasts who travel over California's excellent roads. The supervisors of Santa Cruz County have passed an ordinance to open to automobilists the mountain road between Santa Cruz, through Los Gatos (the City of Cats), to San Jose, and the ordinance will go into effect March 1.

It is now about two years since automobiles were ruled off this mountain road, and since that time automobilists and hotel proprietors have been endeavoring to have the law revoked. This mountain road is one of the best in the State, and abounds with scenic grandeur. Hitherto touring parties were compelled to go around the mountain via Gilroy and Watsonville, and the trip was long and uninteresting.

It is probable that this act on the part of the Santa Cruz authorities may result in the passage of an ordinance by the road supervisors of Santa Clara County to open the roads in that district, which are equally as good as those in Santa Cruz.

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LEE BECOMES PRESIDENT

Succeeds Whipple and All Becomes Serene in A. A. A.—Amateur Rule in Prospect.

Elliot C. Lee, of Boston, is the new president of the American Automobile Association. He succeeds to the vacancy caused by the resignation of Harlan W. Whipple, who is going abroad for an extended period for his health's sake.

Mr. Lee, as the Motor World stated last week, had been prominently mentioned for the office previous to the annual election in January, so that his choice, which was made at a meeting of the directors in New York on Monday last, is not wholly in the nature of a surprise.

He is president of the Massachusetts Automobile Club, a banker, and is a cleancut gentleman of affluence, influence and experience, who cannot but increase the influence and weight of the organization. His election smoothed out all of the kinks caused by the flare-up over the Florida carnival, evidence of which was immediately apparent in the withdrawal of the resignations of W. K. Vanderbilt, jr., and William Wallace as members of the racing board.

The vacancy in the chairmanship of that committee was not filled. There were those who stoutly urged the reappointment of A. R. Pardington, the former incumbent, but Mr. Pardington, who was present, as stoutly declined it, and, with the majority, urged that influence be brought to bear on Mr. Temple to withdraw his resignation. This opinion and desire prevailed, and accordingly the request was made of Mr. Temple, who is still in Florida at his winter home. It is believed that he will not refuse to serve out his term.

At the meeting it was decided also to open correspondence with the foreign clubs in an endeavor to attract entries for the Vanderbilt Cup race for 1905, entries for which close April 16.

Mr. Lee presided at the meeting, the others in attendance being Dave H. Morris, Automobile Club of America; A. R. Pardington, Long Island Automobile Club; George F. Farrington, Automobile Club of New-Jersey, and C. H. Gillette, secretary. The meeting was held in the rooms of the Automobile Club of America.

Since the return of the A. A. A. officials from Florida much additional light has been shed on the situation as it really exists, which appears to have been more or less garbled in the newspaper reports.

In the Dewar Cup matter, for instance, it is now known that the entrance fees will not revert to the commission in charge of the cup, which is composed chiefly of Mr. Dewar's press agent and his intimates, but instead will go to the promoters of the meet at which the cup is raced for, and these races will be held under A. A. A. rules or they will not be held at all. Sir Thomas was informed substantially that, if these terms were not agreed to and the deed of gift changed accordingly, his trophy would be returned to him, or, at any rate, would not be permitted to be competed for at any sanctioned meet.

It has also come out that, as the result of the situation created by the Florida carnival, the adoption of an amateur rule is extremely probable. At an informal meeting of a number of sportsman drivers the subject was discused at length, and the sentiment prevailed that it is not fair to longer oblige them to compete with hired men. For next year's carnival they favor two sets of races at the same distance—one set open to the hired men, the other open only to amateurs. The men involved are of such influence that it cannot well be doubted that the long deferred amateur definition will finally evolve from the sentiment.

The report that a blanket sanction for the dates covering next year's carnival had been granted the Florida East Coast Automobile Association proved to have been untrue, or, at any rate, premature. No action in the matter has been taken.

Germany and America Lodge Protests.

Following the decision of other important countries, Germany has now lodged its protest against holding the Grand Prix or "Consolation race" simultaneously with the Bennett or International Cup contest. The letter, which the German Automobile Club has sent to France, is short and to the point, as follows:

"After having received your communication relative to the conditions that would govern the race for the Grand Prix, we have the honor to inform you that in all probability we shall not be in a position to compete in the Coupe Internationale race should both these events be run at the same time.

"As it is probable that other automobile clubs will take the same position in the matter, we beg you, in the interest of the Coupe Internationale, which has become the classic race for automobilists, to reconsider your decision."

The Automobile Club of America also has filed its protest against the French proposal, but the language of the protest has not been given out.

Signs of "a Frost" in Cuba.

If "frost" falls on the so-called "international road races," which are due to occur in Cuba this week, it need cause small surprise. Indications of a blighting temperature reached several manufacturers this week in the form of this pressing telegram from Havana:

"If you will send a car, we will pay expenses both ways."

The message was signed by the "United States secretary" of the so-called "International Automobile Racing Association of Cuba," the organization of which, it will be recalled, followed a visit to Havana of S. Arthur Miles and William J. Morgan, two unselfish foreign "sportsmen," now resident in America, and who have the reputation of having a keen scent for good things and soft marks.

FERRY BILL PROGRESSES

Passed by the Senate Without Opposition and Favorably Reported in House.

It may now be said that automobiles are half-way on ferryboats—that is, the bill permitting them to run on and off boats under their own power, has been passed by the United States Senate, and its passage by the House of Representatives is now almost an assured fact.

The bill, which was inspired by the Automobile Club of America and introduced by Senator T. C. Platt, of New York, is an amendment to Section 4,472 of the Revised Statutes, approved four years ago, by the terms of which fires in automobiles had to be extinguished before they could be taken on a ferryboat for transportation. The result has been that automobiles have had to be towed on and off boats by horses or pushed on and off by men, and at some stages of the tide this work has proved very onerous, besides being expensive.

The amendment, as introduced by Mr. Platt, went through the Senate last Friday with a rush, not a member voting against it. The House Committee on Merchant Marine and Fisheries has authorized a favorable report on the amendment, and it will be presented in the House of Representatives at Washington to-day.

The amendment repeals the former section of the statute, and reads as follows:

"Nothing in the foregoing or following sections of this act shall prohibit the transportation by steam vessels of gasolene or any of the products of petroleum when carried by motor vehicles (commonly known as automobiles) using the same as a source of motive power; provided, however, that all fire, if any, in such vehicles or automobiles be extinguished immediately after entering the said vessel, and that the same be not relighted until immediately before said vehicle shall leave the vessel; provided, further, that any owner, master, agent or other person having charge of passenger steam vessels shall have the right to refuse to transport automobile vehicles, the tanks of which contain gasolene, naphtha or other dangerous burning fluids."

It will be seen by the terms of the bill that ferryboat owners may, if they so desire, and as is at present the case, refuse to transport automobiles unless the fires in them have first been extinguished, but such a move on their part is not at all likely.

Glidden Goes Farthest South.

Charles J. Glidden, the globe girdler, has reached the most southerly point it is possible for man to drive a motor car. The name of the place, Bluff, in the extreme south of New Zealand, in itself suggests a jumping off place. In New Zealand Glidden travelled 1,145 miles, which brings his total mileage up to 21,438.

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Demonstrating with the Thermometer at Zero.



CHARLES CODDINGTON AND E. S. YOUSE AT THE BASE OF MOUNT PENN, READING, PA.

Demonstrating with the thermometer at zero and snow nearly a foot deep on the ground, and not on city streets, but on country roads, is not exactly an enjoyable occupation, but it certainly is a practice calculated to make the public "sit up and take notice" of the practicability of the motor car in all weathers.

Unenjoyable though it may be, however, that is the sort of work that Charles Coddington, of the T. B. Jeffery & Co. staff, has been performing in Pennsylvania for more than a month past. In fact, he has been not only visiting Rambler agents and giving demonstrations to their prospective customers, but he has been driving from town to town, come what may. The trip has proven an eye opener in many parts of the country, and has created a deep impression.

E. S. Youse, of Reading, who handles a slice of Rambler territory, accompanied Coddington for several days, and in a letter to the Motor World tells what the work is like.

"I met Mr. Coddington on Friday morning in Norristown," he writes, "from whence we proceeded to Phœnixville, which is the most southern portion of our territory. There was considerable snow and ice on the ground, but as the rear wheels of the car were equipped with a pair of chain creepers we got along in grand style. The weather was excessively cold, however, but this seemed to have no effect on the car.

"All along the line we had sent notices to prospective purchasers advising that we would be in their place at a certain time and would call and give a demonstration of the new Rambler, surrey type. This, with the sign on the car, created a great deal of interest.

"Upon arriving at Phœnixville we immediately started demonstrating. We remained in this town all of Friday and Saturday, and had something like twenty people out in this machine. Every one seemed to be pleased, and surprised how very satisfactory the car worked in the disagreeable weather. Over Sunday the car was stored in a cold stable, and when we turned over the motor on Monday morning it started with the first turn of the crank. We, of course, let all of the water drain out, which is a very simple matter on a Rambler car, and, aside from filling the water tank and oiling up, we were off for Royersford and Spring City in a very short space of time.

"Over Sunday the weather had moderated considerably, leaving nothing but slush, mud and water. We had these road conditions to contend with for three days, but the car seemed to improve at every stage. Once we were in a snowdrift, then in a pool of water, and the next moment in five or six inches of

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mud. These various conditions on a number of occasions recalled to our minds what we had read of the remarkable New York to Pittsburg endurance run.

"In Royersford and Spring City we had out a number of people and got through in both places in about three and one-half hours. We then went to Pottstown, where we put in the rest of the day demonstrating to a number of persons, who all seemed to be elated with the satisfactory working of the machine. On Tuesday morning we started for Reading, a distance of eighteen miles. It was snowing when we started and the weather somewhat colder. We had not gone a very great distance when it started to rain, and continued to do so until we arrived at Reading, about 10:30 a. m. At noon it started to snow, and kept snowing so hard that we did not care to ask any one to go out in the car. The car was run to our garage, where it received a much needed and thorough cleaning. All the following day, Wednesday, it snowed so heavily that we did not go out with the machine until about 4 o'clock in the afternoon, when it had let up snowing some. By this time we had about nine inches of snow, and it was really astonishing to see how the car ploughed through it. Thursday, Friday and Saturday the car was being run practically all the time, and it certainly received some hard work, as every one wanted to see what she was capable of doing on hills.

"On Sunday, January 8, we started for Harrisburg, a distance of fifty-four miles, which was made in about four hours. The roads were good, with the exception of the last twenty miles, in which we encountered some very large snowdrifts, but as everything was frozen, and aside from some deep wagon ruts which necessitated considerable low gear work, we got through all right.

"I returned from Harrisburg by train after putting in the coldest day in an automobile that I ever experienced. Coddington was scheduled to leave for Williamsport on Wednesday morning, a distance of ninety-five miles."

Johnson Goes to Philadelphia.

E. C. Johnson, from the Cleveland factory of the White company, has become associated with the Quaker City Automobile Co., Philadelphia, primarily to push the sale of White steamers. Although Johnson is quite well known in the West, having traversed that territory thoroughly, he is new to the East, but does not lack that experience that should enable him to make his impress felt.

How Thomas Fooled the Blizzard.

During the recent blizzard in Buffalo, N. Y., the E. R. Thomas Motor Co. ordered out a number of their cars and sent them to the homes of their employes. The cars were also used to take them home, as all traffic was tied up. In this way the business of the enterprising manufacturers was not interrupted, and the workmen were enabled to draw their full week's pay.

Where the White will Locate in Boston.



Final papers were recorded at the Registry of Deeds last week in the sale of the property No. 320 Newbury street, the purchaser being the White Sewing Machine Co., Cleveland, Ohio. This property is to be used by the branch office at Boston, George H. Lowe, manager, and is to be converted into an automobile garage and salesroom for the exclusive sale of the White steam car. The building is of brick, with granite facings, and embraces three stories and basement. It has a frontage in Newbury street of about 116 feet, running back 70 feet.

This property was secured after a search of over a year for a suitable garage, and is the selection made after a thorough examination of several of the most prominent properties in the Back Bay. Plans are already in the hands of the architect, and work of remodelling and renovating the building is well in hand. It is expected to be ready for occupancy by March 1.

The basement and first floor will be utilized for storage purposes, waiting rooms, etc., while on the second floor are the various offices, reception rooms and salesroom. The top floor will be used for storage purposes and light repairs. Electric passenger and freight elevators will connect the several floors. In the reconstruction of this building special attention has been given to the comforts and care of motorists and their cars, and all modern appliances and conveniences will be installed.

How Motor Wagons Helped Uncle Sam.

The postmaster at Detroit has no doubts concerning the practicability of automobiles in the postal service. For three years he has used Oldsmobile delivery wagons to relieve the Christmas congestion, and each year to increasingly better purpose. During the holiday period he used four of the wagons, and this is what he says of them:

"The service rendered was on the whole very satisfactory, and their use was instrumental in securing the delivery and collection of large quantities of mail matter in a very short period of time, and they were also of material assistance in the matter of making quick, special trips to our station postoffices. It is, no doubt, a fact that the aforesaid congestion would have burdened the office for one or two extra days had not these machines been employed."

Trade Cup Givers in Drawn Battle.

Two cups recently offered in Paris, one for the lightest bodies and the other for the strongest tires, have practically ended in a "fizzle." It appears now that the leading Paris carassiers have refused to compete for M. Michelin's cup, which makes the event, under the circumstances, anything but a success. The first sign of Michelin's failure was when the Chambre Syndicale des Carossiers retaliated by offering a cup for the most suitable tires for modern bodies in response to his offer of a cup for the best and lightest touring car body. Now that the principal builders have refused to have anything to do with the contest the cup givers are at bay.

Rubber Ball to Absorb Shocks.

Another of the old bicycle ideas has been brought out in Paris and labelled an original device for reducing the shock on the car when traversing rough roads. It consists of a pneumatic rubber ball, yclept by the inventor "aerophere," which is placed between the suspension springs of the car. Its resiliency is assured by its being practically on the same idea as a pneumatic tire.

By inflating or deflating the ball it can be taken out or replaced at will.

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ABOUT ACCUMULATORS

Some Suggestions Regarding Recharging and the Testing of Currents, Alternating and Direct.

With the greatly increased employment of accumulators for ignition purposes has come a general desire to learn more about this source of current, how best to maintain it and how to recharge it without the necessity of applying to a station. The inconvenience of the latter is its greatest objection, for storage cells are heavy and the process requires several hours at least for its completion.

Where lighting current is available in the house for this purpose its nature must first be ascertained—that is, whether it is alternating or direct current, as the former cannot be used for the purpose. This information can doubtless be had for the asking from the station, but if not possible to get it in this way a very simple test will suffice. Take a glass of water and pour about an ounce of sulphuric acid (commercial vitriol) into it very slowly, and allow the solution to cool, as the mixture generates a great deal of heat. Never under any circumstances pour the water into the acid, and always add the latter slowly. Then take two small strips or pieces of lead to which lengths of wire should be attached, and the latter connected to the terminals of the current supply, using a plug similar to the end of an incandescent lamp and fitting the socket of the latter. The pieces of lead must be kept apart in the acid solution, for if allowed to come together they will short circuit the current and cause the fusible plug to blow out. If the current be direct a brown deposit will begin to form on one of the lead poles, this combination of an acid solution and lead really being an elementary form of accumulator, the deposit representing the charge.

This test serves the double purpose of ascertaining the nature of the current as well as its polarity, and knowledge of the latter is absolutely essential before proceeding further. Granted the first requirement, the latter may be obtained in a much simpler and more convenient method by the use of what is known as "pole testing" paper, which may be had for a few cents. By placing the terminals of both wires on a short piece of this paper, and switching on the current, the negative pole, designated by the minus sign alongside the binding post on the battery, will gradually turn red, whereas the positive will not be affected. Having ascertained this, the positive terminal of the current supply must be connected to the plus binding post and the negative to the minus binding post of the accumulator to be charged.

As its name indicates, the storage battery accumulates, or stores up, a charge of the current that is sent through it, in the shape of a deposit of active chemical on the positive plates, which in turn is depleted as the battery is discharged, and this is the reason why alternating current is not available for the purpose unless transformed by means of a rotary converter or a rectifier into a direct, or constant, current. The latter may be said to flow continuously as a stream of water, whereas the former is a series of pulsations in opposite directions, the commercial frequencies usually employed—65 or 125 cycles—entailing such a rapid fluctuation that in an incandescent lamp no flickering from this cause is perceptible, but in charging a battery the effect of the current entering on one pulsation would be counteracted by the next in the opposite direction, so that no matter how long an accumulator were left connected to an alternating current it could not receive a charge. All electricity in its inception is alternating in character, but in the direct current generator it is commutated or transformed to flow continuously before entering the circuit. For reasons needless to detail here, the use of alternating current for both long distance transmission and local distribution offers many advantages, and is accordingly coming into more and more general use.

Before going further, another principle of the accumulator must be taken into consideration, and that is that the charge sent through it should be of practically the same volume as it is to give forth, or it is apt to be ruined in the charging process. It is accordingly necessary to introduce a resistance in order to bring this down to the proper level. The capacity of the cells in ampere hours, usually stamped on them, must be taken into consideration when charging in order to get the proper charging rate. Of the very small type this will be 10 to 15, medium 20 to 25, and of the standard type used on motor cars 30 to 40 ampere hours; in other words, at a discharge rate of one ampere per hour the cells in question will last the number of hours for which they are rated, and less in proportion as the discharge rate increases. For the first, the normal charging rate should be about half an ampere, the second, or medium size, one ampere, and of the last about one and a half to two amperes.

The simplest method of controlling the usual 110 volt supply is to insert incandescent lamps in the circuit. For the smallest type of cell mentioned one 16 candle power lamp will be sufficient, as it consumes but slightly in excess of half an ampere, and will only allow that amount of current to enter the battery; for the medium size two must be used, or a 32 candle power lamp, and for the largest three. The duration of the charge will be about ten to twelve hours, according to the state of exhaustion the battery is in when connected for charging, though the latter may be expedited by increasing the resistance, two 16 candle power lamps in the first instance, and so on. If sealed in an opaque case the cells will give signs of being completely charged by the generation of an excessive amount of hydrogen gas, which escapes through the vents; if in glass or celluloid this will be visible in the form of myriads of fine bubbles arising from the plates. They may then be disconnected, and on testing with the ammeter should show the charge for which they are rated, 15, 20 or 40 amperes; but in testing the instrument should only be left in the circuit momentarily. In order to ascertain when the battery requires charging, if it does not give visible signs of exhaustion by a weakened spark, it should be tested with the voltmeter, and should the latter register less than two volts per cell recharging is necessary.

In Germany several manufacturers have placed convenient aids for the motorist on the market in the shape of small portable outfits, which render the process of recharging the accumulators at any hotel or station on the road merely a matter of connecting them in the circuit in conjunction with it. The simplest of these consists of nothing more than an attachment plug, a base carrying a single incandescent lamp, a simple "pole seeker" and the necessary binding posts for making connections. It is intended for the use of the motorcyclist principally. A more elaborate piece of apparatus for charging the usual automobile accumulator set carries four 16 candle power lamps, a pole seeker and a snap switch. As lamps can always be obtained wherever current is available, they need not be carried, and this is a great convenience, as they constitute the greater part of the bulk of the apparatus.

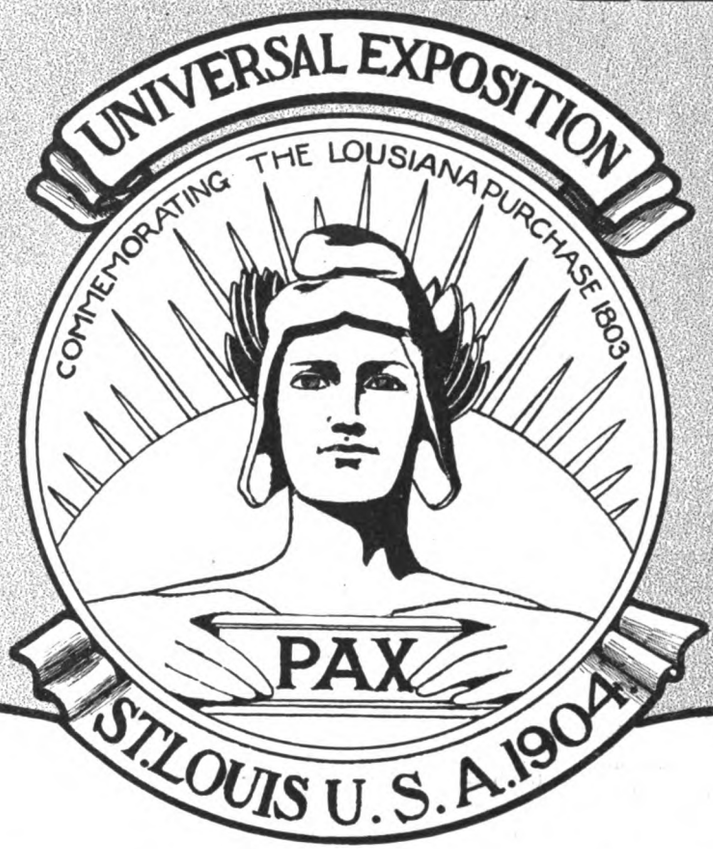
"Intuition" Leads to Verdict for Damages.

If a horse becomes frightened at an automobile and runs away, with injury to the occupants of the vehicle, they are entitled to damages, no matter who is at fault. This is the gist of the amazing verdict rendered by a Utica, N. Y., jury last week in the case of Mrs. Jerome LaGrange, of Dunbarton, who sued Daniel M. Tuttle, the Canastota motor boat manufacturer, for $5,000 damages for injuries which she claimed were caused by the negligence of the defendant in frightening her horse with his automobile.

The circumstances surrounding the case were somewhat out of the ordinary. The plaintiff testified that when she saw the automobile approaching, she alighted from the carriage in which she was driving and led her horse out of the roadway. Tuttle claimed that he construed this act as indicative of an understanding on Mrs. LaGrange's part that he was to continue his way and pass her. The defendant swore that he was travelling slowly, and exercised all due care, therefore he was not guilty of negligence. The plaintiff thought that Tuttle's intuition should have apprised him of the fact that her horse would become frightened if he attempted to pass it, and evidently the "wise" jury was of the same opinion, for a verdict of $200 damages was brought in for the lady.

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GERMAN TURBINE ENGINE

Berlin Man Has Invented One for which Great Things are, of Course, Predicted.

Though at present behind the point of efficiency attained by the reciprocating steam engine, an attempt is being made to displace this type of internal combustion engine by the gas turbine. The subject is not novel, by any means, as experiments with this end in view have been making in Germany for some time past, where the Stolz Gas Turbine Co., of Berlin, is soon to bring out the invention of a Dr. Stolz, of that city, for which great things are predicted. Of course, the first application of this will be to stationary or marine power purposes, but its progress toward a state of efficiency which will surpass that of the present type of reciprocating motor will be followed with interest by many designers of the latter.

Taking into consideration but one side of the question, this form of power would present the advantages of extreme simplicity, lack of vibration and ease and cheapness of lubrication, not to speak of others; but granted a practical gas turbine, the problem of reducing the excessive speed to a point available for the average car may present difficulties in the way of gearing and transmission more than sufficient to nullify its numerous good points. And there are many obstacles to be overcome before a satisfactory turbine will be produced.

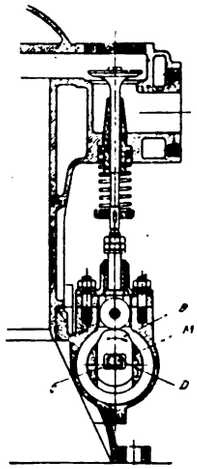
Despite the many and obvious advantages of the steam turbine over the reciprocating engine, years went by before the subject received the attention it merited, and it is only very recently that it has been adopted on a large scale, so that, even should present attempts be fruitful of a successful gas turbine, there is little need for the manufacturer of the usual style gas engine to worry.

Seeking the Variable Inlet Valve.

That the influence of steam engine designing and practise is still felt in the field of internal-combustion engine building is evidenced by a recent return, or possibly adoption in the first instance of one of the best settled and probably one of the most valuable principles of steam engine design, the use of the variable cut-off to change the speed.

This was exhibitied on the Cornilleau de Saint Beuve chassis at the recent Paris Salon, and embodies the usual eccentric valve gear as used on locomotives in this country, except that the reversing links are, of course, missing.

Cams are fitted to a hollow cam shaft in such a manner that they are free to slide up and down in a direction at right angles to the shaft. In the centre of the cam shaft is fixed eccentrically a rod provided with suitable projections coresponding to each cam. This rod is connected by means of a pinion with a lever on the steering wheel. If it is desired to give the maximum lift to the inlet valves the lever on the steering wheel is moved to its limit, and a half turn is thus given to the centre rod which brings the projections to a vertical position. This communicates a sliding motion to the cam, which rides upon the face of the projection and operates the valve tappet. Reversing the operation turns the rod so that the projections on it are horizontal, and it presents a flush surface to the cams, so that the latter on their highest points are then level with the circumference of the cam shaft and the valve tappet is not moved.



Variations of the position of the lever cause the cams to rise more or less on the projections, and by this means complete control of the incoming gases is obtained.

In the diagram, B is the cam in which M is the hollow cam shaft and C is the rod running through M, while D is the projection on the rod C, which causes the cam to rise or not, according to whether it is in a vertical position and the full lift of the valve is given.

On the Germain car the same object is attained by a screwed cap on the cam-actuated tappet. Giving this cap a half turn screws it down on the tappet, which is thus shortened, and the valve is in consequence given less or no lift. Turning it in the opposite way unscrews and therefore lengthens it, giving a bigger lift to the valve. The object of these devices is to control the amount of gas taken into the cylinder and in consequence the force of the explosion.

This is a variation of the throttle method of control which has the disadvantage of requiring added complication to operate it and at first sight does not promise any compensating benefits for the outlay.

Fire Patrol Wagons for Minneapolis.

Two automobile patrol wagons figure prominently in a plan which Chief of Police Doyle of Minneapolis has conceived for the reconstruction of the police department of that city. Chief Doyle is of the opinion that horses occupy too much room and cost more to care for than automobiles. Besides, automobile patrols would be able to reach the alarm boxes quicker.

LIGHT ON LUBRICANTS

Mixtures Recommended in France and Why They Should Not be Blindly Followed.

It is amazing to note to what an extent the automobile press generally regards the dicta of the French members of the fraternity as inspired, and, gulping them down without a choke, regardless of how misleading they happen to be, forthwith translate and reproduce them verbatim for the enlightenment of those who are struggling in darkness.

The following advice taken from Le Journal du Petrole on the subject of lubricating oil is now running the gamut of the English motoring press.

"A very important question must be studied with reference to automobiles, that of the lubricants to be made use of for the motor and bearings, but it must be remembered that the lubricant of an engine of two horse power cannot be the same as the lubricant of one of twenty horsepower." This is, indeed, an illuminating fact, well worthy of consideration.

"Absolutely fixed rules cannot be given for the composition of the lubricant to be used in all motors. It is especially necessary that the supply of the lubricant to the cylinders should be made as regular as possible, and it must not be forgotten that the inside of the cylinder is subjected to a very high temperature which occasions the vaporization of the lubricant, and even its decomposition. In the latter case, a deposit of carbon takes place, which inconvenience should be suppressed as far as possible. That is why lubricants not readily decomposed are preferable to those of the opposite tendency, and consequently petroleum oils are to be preferred to colza and olive oils, and to fats The composition of the oils to be employed is quite varied, but we give that of a good lubricant suitable for automobiles of from 6 horsepower to 10 horsepower: Ten gallons Russian motor oil one gallon of extra refined cylinder oil, thirty gallons of heavy American motor oil.

"For vehicles of less power, a lighter American oil may be employed, and for those of greater power the quantity of cylinder oil may be increased Some chauffeurs prefer to add a certain quantity of fatty oils, like olive oil, but we think that these should not be employed for the reasons given previously. The higher flashing points of oils are embraced between 530 degrees and 600 degrees Fahrenheit. Such oils would be excellent for lubrication, but cannot be employed, not being sufficiently fluid. That is why oils are preferred for motors of which the flashing point is 420 degrees Fahrenheit.

"For the cylinders of automobiles worked by steam, it may be said that an excellent lubricant can be prepared by mixing varying quantities of cylinder oil and of heavy motor oil, with a certain quantity of fatty oil; for

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example, thirty gallons of cylinder oil, twenty gallons of heavy motor oil, four gallons of tallow."

For the benefit of those to whom lubricating oil means that and nothing else, and to whom "oil for oiling" is all the same, it must be explained that there are enough different grades and qualities of lubricating oil to fill a fair sized volume merely in enumerating them, and that the composition of each is such as to fit it for a particular purpose only. As mistakes in choosing among this endless array usually mean endless trouble for the man who makes them the subject is one deserving of study, which, needless to add, it has not been given to any extent thus far.

It will be just as well not to attempt to make your own compounds by the startlingly clear formulae given above, even though you do handle large quantities of lubricants for automobile use; the refining companies employ high-priced chemists to do it, and it must be admitted they achieve the desired result. And it will, likewise, be advisable for the novice when investing in this great necessity not to ask for lubricating oil for a "two horsepower engine" or a "twenty horsepower engine," because the laugh will be on him. But it will help to clear matters if he will inform the salesman whether he possesses a heavy bearing slow speed engine, or one with light parts running at high speed, and whether the lubricant is for the bearings, crank case or the cylinder. For the first a good grade of machine oil should be used, and a little saving in this respect is false economy of the worst kind, while for the cylinders there should always be used an oil that is made expressly for this purpose. But "cylinder" oil is a fairly large division of the subject, and the exact use it is to be put to will be of value to the man who is selling it. Many have gone ahead on the presumption that cylinder oil is all one and made use of the heavy bodied article designed for use in steam engine cylinders, with the result that in a short time the passages become choked with carbon, the engine loses power and continues exploding, even after shutting off the spark. The proper and only oil for the motor cylinder is a thin lubricant that will not carbonize under the high temperatures it is subjected to. An occasional examination of the exhaust passages of an engine will suffice to reveal whether this is occurring or not, and the remedy is a better lubricating oil. But by better doesn't mean merely cost, as steam engine cylinder oil is worth three to four times as much as the gas engine article, and that many times worse than the latter for the purpose. For use in the crank case still another variety is essential, as here again conditions are different; ordinary oil will soon churn into hard lumps in the presence of water. The best lubricant for this part of the engine is termed "crank case oil" by the trade, and neither the cylinder nor the bearing oil will take its place. From a study of the above the man who has been indiscriminately using one kind of oil to lubricate all parts of the engine should see some light as to at least some of his troubles.

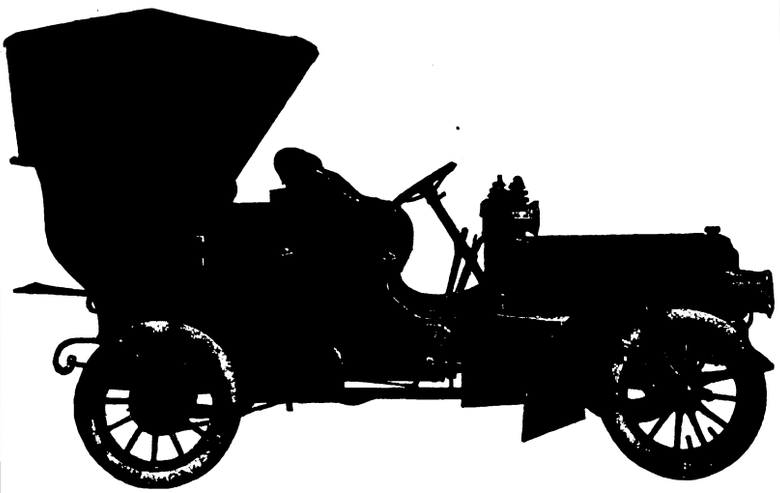
Soft Tools for Driving Work.

For driving keys and other work about machinery a babbitt or lead hammer is better than a copper hammer, which hardens the more it is used. To keep the lead hammer from getting out of shape, take a piece of copper pipe, iron pipe size, drill a hole in one side of it and fit with a handle, and then fill in the hollow of the copper pipe with lead.

Even better than the lead hammer are hardwood blocks on end. Put against part to be driven and strike with a hammer. For driving the stub end of connecting rods on large engines back and forth when keyed up, use blocks about five inches square and three feet long.

Mixture to Prevent Rust.

A good mixture for use as a slush to prevent the rusting of machinery is made by dissolving one ounce of camphor in one pound of melted lard; skim off the impurities and add enough black lead to give the mixture an iron color. After cleaning the machinery carefully, smear on the mixture. It can be left indefinitely, or if wiped off after twenty-four hours will prevent rust for some time. When removed the metal should be polished with a soft cloth.



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April 1.—De Caters Cup, France.
May 20.—Chasseloup-Laubat Cup, France.
June 17.—GORDON-BENNETT CUP, Germany.
July 26.—St. Louis Non-Stop Run, America.
Sept. 4.—Brescia Circuit (World's Fastest Road Race), Italy.
Sept. 15.—Consuma Cup, Italy.
Oct. 8.—Vanderbilt Cup, America.
Nov. 24.—Eagle Rock, America.

1905—FIRST IMPORTANT RACE THIS YEAR.

Delhi to Bombay Reliability Contest, Dec. 26-Jan. 2. Count Guilio de Groppelo driving a 16.20 H. P., F. I. A. T., with Michelin Tires, won the cups offered by the MAHARAJAH of KAMPUR and the MAHARAJAH of GWALIOR.

FIRST IMPORTANT RECORD THIS YEAR.

Jan. 31.—One kilometre, Henry L. Bowden, 120 h. p. Mercedes, Ormond-Daytona, Fla. 20 2-5
Former record 21 2-5
Jan. 31.—One mile, Henry L. Bowden, 120 h. p. Mercedes, Ormond-Daytona, Fla. 32 4-5
Former record 39

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NEW YORK OFFICE, 11 Warren Street.

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The Week's Patents.

780,462. Pneumatic tire. William W. Walter, Aurora, Ill., assignor of one-half to Jay D. Miller, Geneva, Ill. Filed August 17, 1904. Serial No. 220,994.

Claim—1. In a pneumatic tire, the combination of an outer tube, an inner flexible tube, a series of non-elastic crescent shaped boards with rounded ends, of unyielding timber free of attachment to the outer or to the inner tube, having their convex edge simply bearing against the interior of the outer tube and their inner concave edge bearing upon the inner tube, air chambers occupying positions intermediate of the outer tube, the inner tube and the rounded ends of the edges of the boards, with a cushion thinner in the middle portion and located between a portion of the inner tube and of the outer tube, substantially as described.

780,480. Clutch. Jacob C. Crabill, Hartford City, Ind. Filed October 23, 1901. Serial No. 79,733.

Claim—In a clutch, the combination with longitudinally aligning shafts independently moved with relation to each other, of a wheel fixedly secured on one of the shafts to rotate therewith and having a peripheral flange, a sleeve rigidly secured on the opposite shaft and provided with radial arms rectangular in cross section, segmental carriers co-operating with the opposite extremities of the said radial arms and having keepers slidable over said arms, the keepers having an angular contour corresponding to the arms and the carriers, each provided with forwardly projecting flanges with segmental shoes thereon, a collar slidable on the shaft to which the said hub is secured and formed with a chamber extending longitudinally thereinto to receive and set over said hub, the part of the collar having the chamber therein having opposite slots to receive the portions of the arms adjacent to the hub, and pairs of adjustable connecting devices movably attached to the upper and lower portions of the collar and to the carriers, the connecting devices being atached to the carrier on opposite sides of the said arms.

780,482. Friction Clutch. James F. Duryea, Springfield, Mass. Filed March 27, 1900. Renewed May 12, 1904. Serial No. 207,694.

Claim—1. In a friction clutch, the combination of two engaging members, one of the members having a cylindrically bored rim, and the other member consisting of a plate with radially movable friction shoes mounted thereon, a flanged sliding sleeve, an equalizing plate in two parts mounted on the sleeve and transversely movable with respect thereto, forked toggles between the equalizing plate and the shoes, a hinged pin through the forks of each toggle and both parts of the equalizing plate, and means for applying the clutch through the sliding sleeve, substantially as described.

780,486. Friction Clutch. Ralph M. Phillips, Jamestown, N. Y., assignor to Thomas Henry Smith, Jamestown, N. Y. Filed August 24, 1903. Renewed November 28, 1904. Serial No. 234,544.

Claim—1. In a friction clutch having a revoluble driving member, a driven member having means for gripping said driving member, connecting and disconnecting means for said members consisting of a "wabble plate" mounted on the driven member to be drawn into frictional contact with said driving member, and means for putting said plate in and out of touch with said driving member.

780,519. Pneumatic Tire. Winfield J. Mitchell and James R. Mitchell, Lynn, Mass., assignors to Flexible Metal Mfg. Co., Lynn

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15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

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One—1904 Franklin, light tonneau, blue body, yellow running gear. Practically like new, run less than 800 miles.

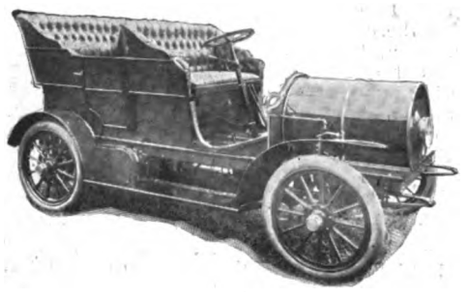
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Get American cars
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LET US TELL YOU ABOUT

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Logan Construction Co., Chillicothe, Ohio.

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Mass., a corporation of Massachusetts. Filed March 18, 1904. Serial No. 198,701.

Claim—1. A pneumatic tire containing in its wall a flexible layer of comminuted metal having a polished outer surface.

2. A pneumatic tire containing in its walls a protector composed of a flexible inner base layer, and a comminuted metal outer layer adhering to said base layer and having a polished outer surface.

780,533. Motor Controlling Mechanism. Peter A. Sheley, Louisville, Ky. Filed September 24, 1904. Serial No. 225,858.

Claim—1. The combination with a power shaft of an endless flexible connection engaged therewith, rotatable retarding devices carried by the flexible connection, a trip device located in the path of the retarding devices to rotate the same, and means carried by the shaft to frictionally engage the retarding devices during the rotation thereof.

780,549. Explosive Engine. John G. Callan, Lynn, Mass., assignor to General Electric Co., a corporation of New York. Filed September 4, 1903. Serial No. 171,865.

Claim—1. In an engine, the combination of a rotary shaft, a plurality of cylinders arranged in parallel relation to said shaft, a pair of balanced pistons in each cylinder, and means for imparting rotary motion to the shaft from the pistons.

780,555. Electric Igniting System for Vapor Engines. Albert E. Doman, Elbridge, N. Y., assignor to the Elbridge Electrical Mfg. Co., Elbridge, N. Y., a corporation of New York. Filed July 7, 1902. Serial No. 114,608.

Claim—1. In combination with the sparking terminals of a gas engine, dynamo and its working circuit in which said terminals are connected, a variable resistance device and electro-magnetic operating means therefor, both connected in series in the working circuit.

780,556. Gas Engine. Albert E. Doman, Elbridge, N. Y. Filed April 20, 1903. Serial No. 153,462.

Claim—1. In a two cycle gas engine, a cylinder, a crank case inclosing one end of the cylinder, a self-closing valved outlet in the opposite end of the cylinder, a conduit connecting the interiors of the cylinder and crank case, a piston operatively connected to open the valve, a manually operated valve in the conduit to control the amount of mixture admitted to the cylinder and connected to the first named valve to vary the time of its closing to correspond to the amount of mixture present in the cylinder.

780,564. Charging Storage Batteries. John L. Hall, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Filed July 13, 1903. Serial No. 165,219.

Claim—1. The combination with a generator and a storage battery, of an automatically opening charging rheostat provided with a control magnet having two windings, one winding being connected across the generator terminals and the other winding being connected across the battery terminals and arranged to act always in opposition to the first mentioned winding.

780,633. Speed Changing, Driving and Reversing Device for Motor Vehicles. De Lonson E. Barnard, Chicago, Ill. Filed March 21, 1904. Serial No. 199,322.

Claim—1. In a motor-vehicle, in combination with the front and rear axles, a motor mounted upon the vehicle-frame intermediate the vertical planes of said axles, comprising a longitudinal main shaft; friction disks on the opposite ends of said shaft; frictionally-driven trains of which said friction disks, respectively, are the initial wheels; frames in which the secondary wheels of said trains are journaled, said frames being pivoted for carrying said secondary wheels toward and from the initial wheels respectively; connections between said pivoted frames for moving them simultaneously, and means at one end for operating said frames to carry said secondary wheels into and out of frictional engagement at will.

780,635. Gas Engine. Sheldon F. Burlingame and Carl E. Burlingame, Worcester, Mass. Filed December 18, 1903. Serial No. 185,670.

Claim.—The combination of a gas engine cylinder, and an attachment for starting the engine by the explosion of a cartridge consisting of an explosion-tube adapted to receive a cartridge or shell at one end, with its other end extended into the engine cylinder in position to be exposed to the successive charges of burning gas, said inwardly-projecting end being closed except for perforations of smaller diameter than the bore of the tube, whereby the wad of the cartridge fired in the explosion-tube will be lodged and consumed in the explosion-tube without passing into the engine-cylinder.

780,665. Motor-Vehicle. Henry E. Kellogg and George F. Swain, Harvey, Ill. Filed June 15, 1903. Serial No. 161,591.

Claim.—1. A motor-vehicle having two axles with supporting wheels mounted thereon, one of the axles pivotally mounted and adapted to be swung laterally and out of parallel with the other axle for steering purposes, a motor supported by one axle and means for normally connecting the motor with the supporting wheels of both axles, but adapted to disconnect the motor from the supporting wheels of the said other axle after the two axles are out of parallel.

780,673. Carburetter. Jay F. Lawrence, Chicago, Ill., assignor to National Light, Heat and Power Company. Filed October 30, 1903. Serial No. 179,184.

Claim—1. A carburretor comprising a generating and mixing tank, an air inlet-pipe therein extending to near the bottom thereof, a hydrocarbon-inlet pipe extending through the top of the generator, a valve therein, an inclined evaporating surface, a float in the bottom of said tank, a rod connecting the same with said valve, a vapor-discharge pipe connected in the top of said tank, and means delivering a blast of air through said air-pipe to the bottom of the generator and mixing-tank whereby an air-current flows upwardly along the inclined evaporating-surface against the downwardly-flowing current of hydrocarbon.

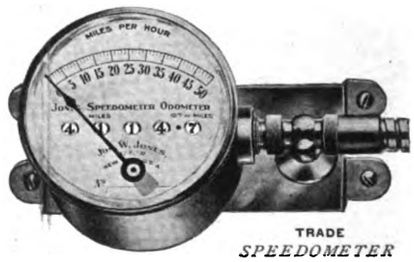
780,692. Face Shield for Riders of Motor-Vehicles. Clement H. Whatley and Lena Benck, Hammersmith, London, England. Filed March 8, 1904. Serial No. 197,070.

Claim—1. A wind and dust protecting face shield comprising a frame surrounding and retaining a disk of transparent material and having a leg or foot attached thereto for adjustably connecting said shield in a socket or recess attached to a waist-belt substantially as and in the manner herein described.

780,705. Regulating Device for Petroleum Motors. Ferdinand Charron and Leonce Girardot, Paris, France. Filed March 22, 1902. Serial No. 99,500.

Claim.—In a regulator for petroleum motors, the combination with the sliding valve-actuating rods, guides therefor, and friction rollers carried by the rods, of a shaft, a sleeve slidably mounted thereon, having a cam on each end thereof, said cams engaging with the rods, rings on said sleeve, a rod G arranged parallel to said shaft, a fork integral with said rod and engaging with the sleeve between the rings thereon, a second sleeve J slidably mounted on the shaft, a centrifugal governor for moving said sleeve and a second fork adjustably secured to the rod G and connected to the sleeve J whereby on the movement of the sleeve J the cams will be disengaged from the friction rollers on the rods.

Jones Dashboard Speedometer-Odometer.

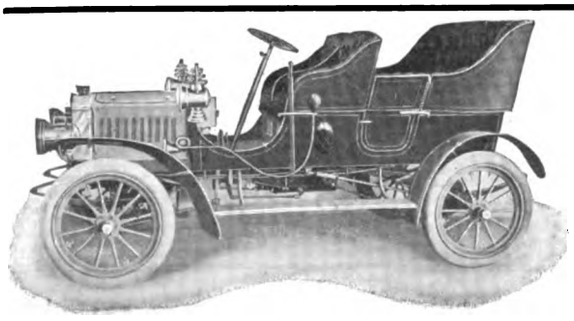


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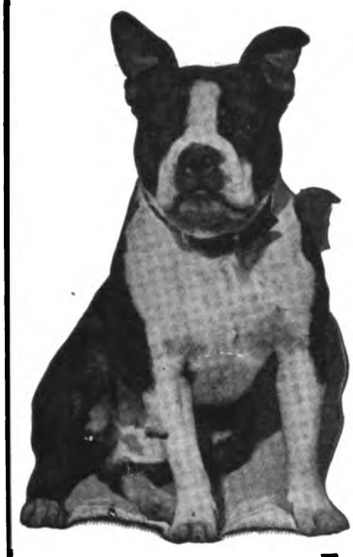
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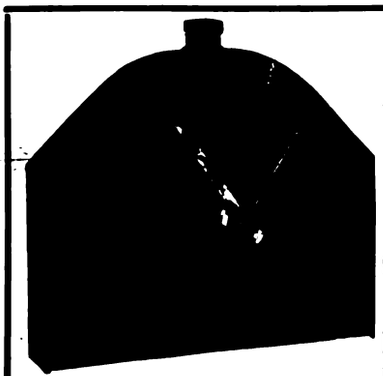
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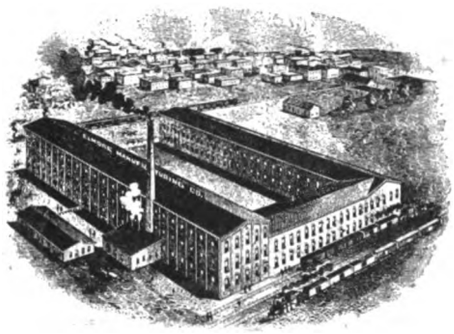
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ELMORE MANUFACTURING CO.

Elmore Automobiles AND Launches

HYDRO-CARBON -MOTORS-

Clyde, O. Jan. 4, 1905.

The B. F. Goodrich Co.,
Akron, Ohio.

Dear Sirs:

Percy F. Megargel, W:S. Harrison, of Rochester, N. Y., and Ralph Megargel of Scranton, Pa., ran an Elmore Pathfinder,- a machine having 16 horsepower and weighing, including passengers, baggage and extras, 2150 lbs. - from New York to St. Louis and back to Philadelphia, on a single set of Goodrich tires, not only without a puncture but without having to pump up the tires during the entire trip . This trip was begun on May 18th when the roads were almost impassable, and on the return trip, when passing through Pennsylvania, the rains had washed the dirt off the roads so that it was an almost continual run over rocks and stones. The severe service through which these tires went would be more appreciated by the perusal of the little booklet which the Elmore Company have gotten out, "The Cruise of the Pathfinder," illustrating and describing this wonderful tour.

The mileage on the first set of tires figures up to a total of about 3000 miles. This same car made the trip a second time but the rear tires were changed, not because the tires had given out, but they were worn some on the sides from continual traveling through deep ruts, and as the second run was made under the auspices of the Association of Auto Mfgrs. and the cars were liable to a penalty unless a certain number of miles were made each day, it was deemed advisable to change the tires to prevent there being any possibility of delay from tire troubles, although there was no reason to believe that the original set of tires would not have been able to make the trip the second time.

Yours truly
Elmore Mfg Co
B A Becker Treas

THE B. F. GOODRICH CO., Akron, Ohio.

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CHICAGO, 141 Lake St.
DETROIT, 80 E. Congress St.
BOSTON, 155-161 Columbus Ave.
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FIRESTONE SIDE-WIRE TIRES

Three times more Firestone than any other make. Substantiating our claim that it is the

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It has made possible the success of the Commercial Automobile of to-day.

Use it for long and economical service, durability and ease.

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Starts from the seat every time—warm or cold—morning, noon or night. No air pumps, or reservoirs, coil springs or other complications. A simple push of the foot lever throws the engine over, and

Presto!

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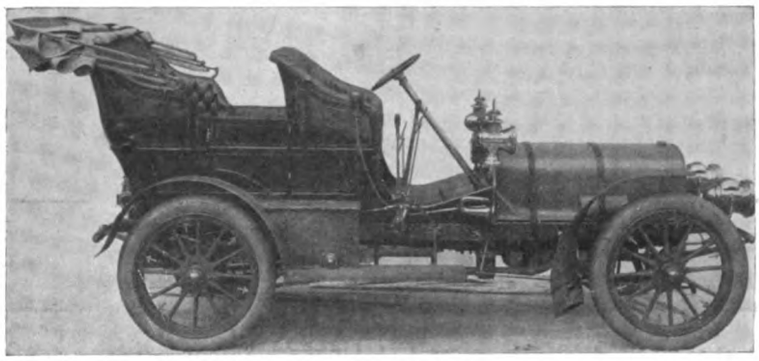
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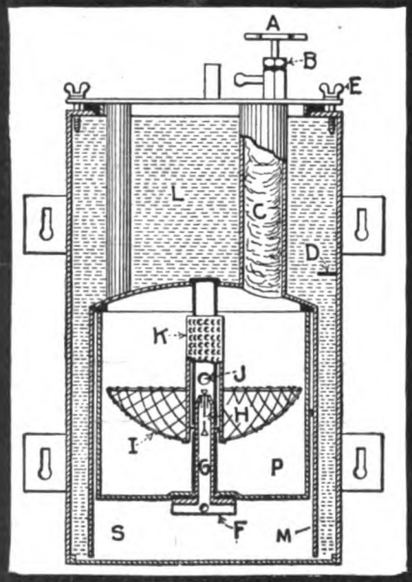
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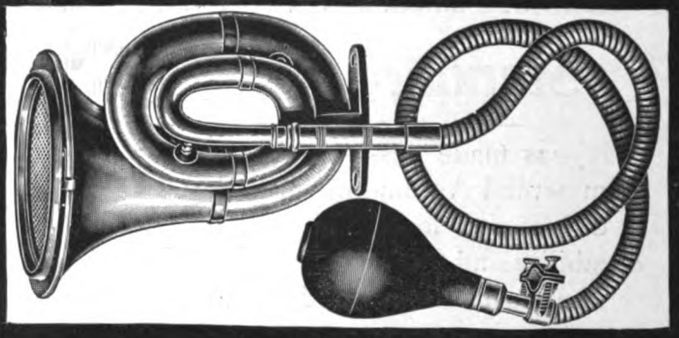
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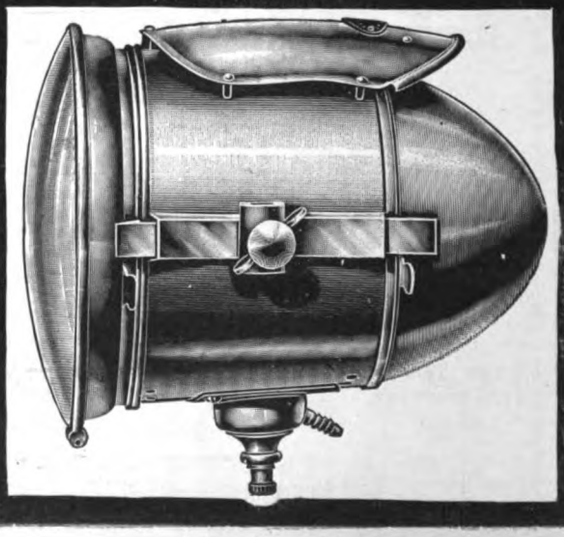
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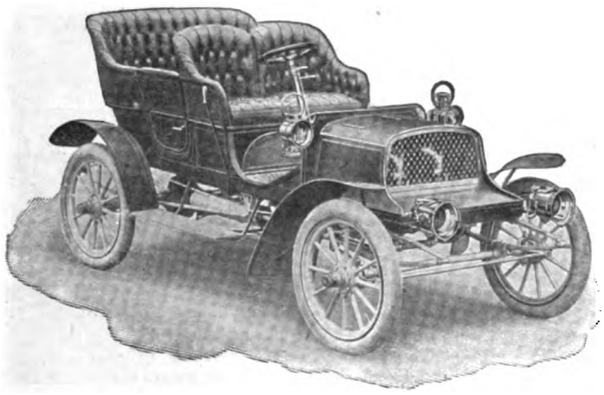
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16 H.P. TOURING CAR, $1400. **8 H.P. TOURABOUT, $750.**

The "Maxwell" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and accessible in every part. They have Bevel Gear Drive. METAL BODIES. Transmission Case and Crank Shaft cast in one Aluminum casting. "Perfectly simple, simply perfect."

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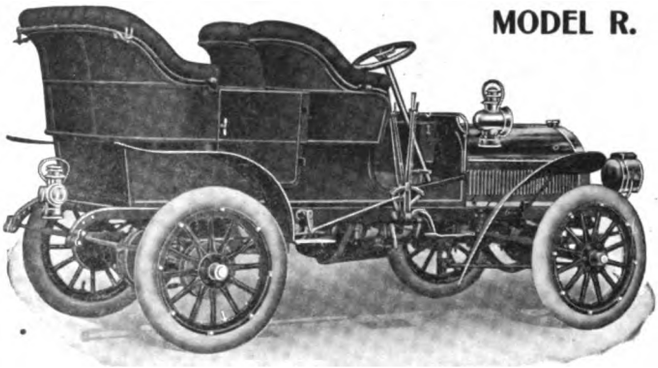
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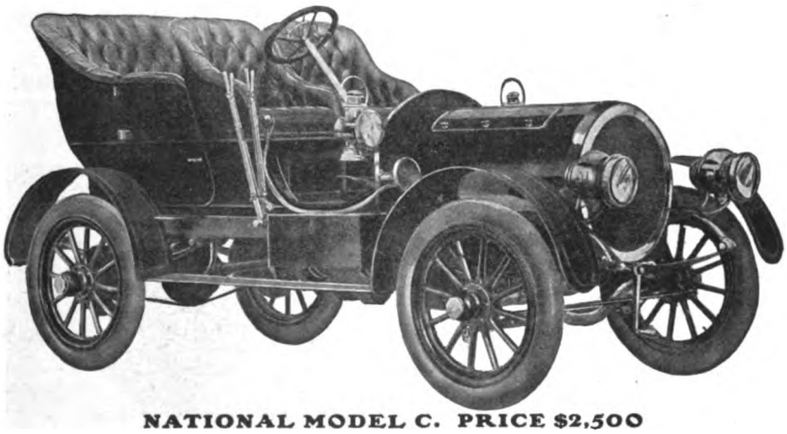
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Side entrances to detachable tonneau.
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New round radiator. Oval hood.
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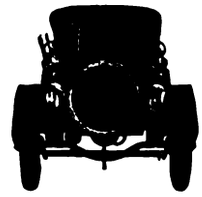
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Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

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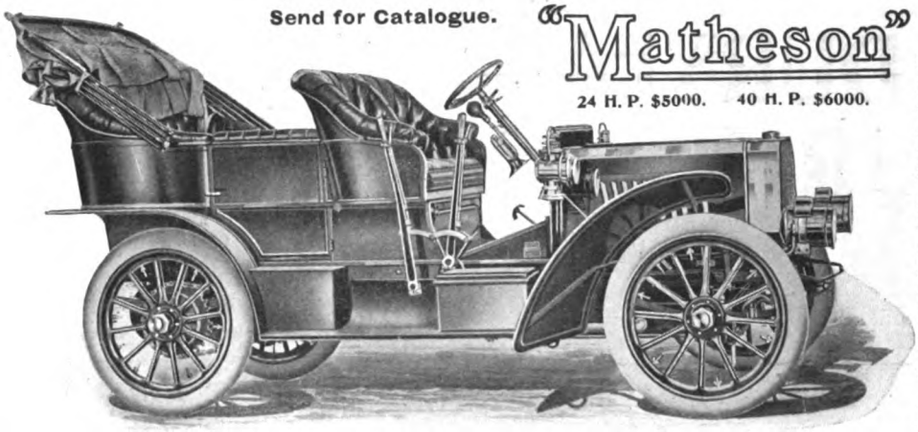
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Self-starting from the seat.
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Long Life—insured by using greater factors of safety in every vital part than ordinarily employed.
Speed—Guaranteed 40 to 60 miles an hour, according to H. P. and gear.

MATHESON MOTOR CAR CO., - Holyoke, Mass.

N. Y. Agents, Shepard Bros., 500 Fifth Ave

STANDARD PARTS FOR POWER TRUCKS AND WAGONS.

The marked economy of power wagons for delivery, express and truck service, and their superior reliability when in reasonably intelligent hands, is so well established that those who are conversant with the facts cannot fail to see that power wagons are rapidly beginning to supersede horse service.

PARTS WE SUPPLY:

STEERING GEAR, COMPLETE, CHAINS, COUNTERSHAFT AND REDUCTION GEARS, FRONT AXLES, COMPLETE, SPROCKETS, COUNTER-SHAFT BRAKES, HUB BRAKES, DISTANCE RODS, MOTOR HANGERS, ELECTRIC MOTORS CONTROLLERS AND ACCOMPANYING DETAILS.

Send for Catalogs Nos. 2, 3 and 8. Touring Car Parts, Catalogs 6, 7, 8 and 9.

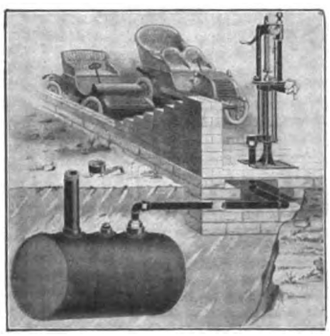
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Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.

BOWSER GASOLINE STORAGE OUTFITS

FROM 7 DOLLARS UP.

200,000 VARIOUS STYLES IN ACTUAL USE.



Pump discharges gallons, half gallons and quarts at a stroke.

The Name of "BOWSER" GUARANTEES QUALITY, DURABILITY, SAFETY and CONVENIENCE.

Our 20 years experience in the Tank business, and in designing Oil Storage Systems, enables us to present a line of Gasoline Storage outfits which will meet the requirements of any automobilist, both as to equipment and price.

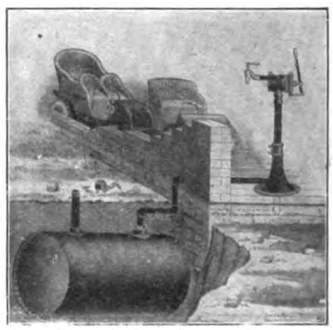
OVER A DOZEN DIFFERENT STYLES FROM WHICH TO SELECT, VARYING IN PRICE ACCORDING TO STYLE, CAPACITY, ETC.

If you use, or contemplate using Gasoline, it will pay you to investigate.

A REQUEST FOR CATALOGUE XIV. WILL BRING FULL INFORMATION.

S. F. BOWSER & CO., Inc., - Fort Wayne, Ind.

Eastern Office: 255 Atlantic Ave., Boston, Mass.



A medium-priced outfit not of the self-measuring type.



DOUBLE SERVICE.

THE APPLE AUTOMATIC SPARKER.

has a two-fold value to every user of gas power for Automobile, Launch or Stationery Engine.

It gives absolutely sure ignition, more speed and more power. Does away with all belt, battery or commutator troubles.

Besides this it gives ample power for three electric lights, whether engine is running or standing still

Easily attached to any engine now using batteries. Our new gear-driven system is worthy of your attention.

Write us for anything pertaining to ignition. We make over eighty articles for ignition purposes. THE DAYTON ELECTRICAL MFG. CO., 91 BEAVER BLDG., DAYTON, OHIO

See us at the Auto Shows at Chicago, Boston and Washington.

The Best Automobile Motors

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Automobile Charging Machines

ARE MADE BY

THE ELWELL-PARKER ELECTRIC CO.,

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THE MICHIGAN

Two Models "E" and "D"

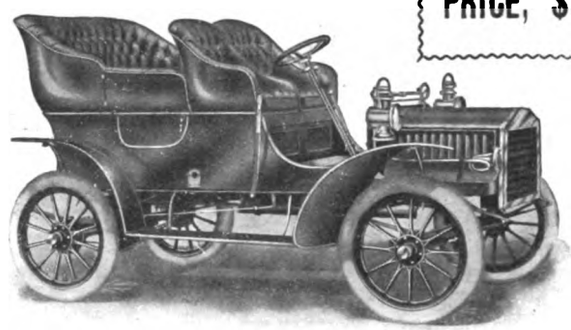
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"THE CAR OF POWER."

MODEL E
PRICE, $1,250

This superb new creation for the coming season must be seen to be appreciated. It first appeals to the purchaser by its beauty, then it satisfies him by its speed, strength and durability.

These cars have our tried and tested 1904 Motors, 14 horse power, 2 cylinder, horizontal, opposed. Strong planetary transmission, Warner differential, Hill precision oiler, Kingston or Schebler carburetor, expanding rear-hub brakes, full elliptic springs, 86 inch wheel base, 30 inch wheels, 3½ inch tires, side entrance body, individual front seats.

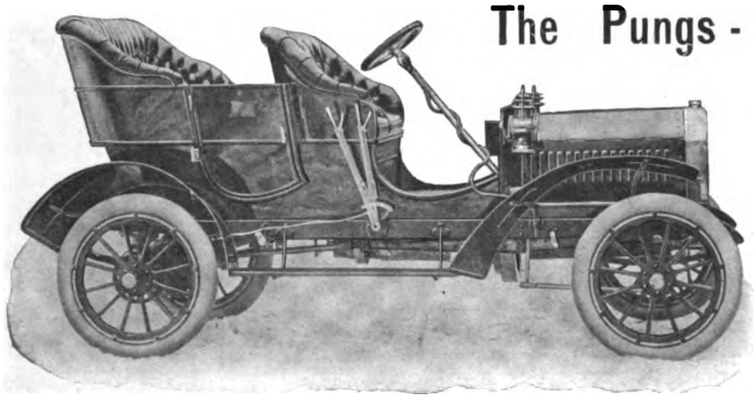


MADE BY

Michigan Automobile Co., Ltd.,

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The Pungs-Finch 4-Cylinder Touring Car



MODEL F.

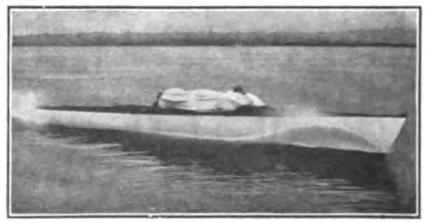
Motor—Four cylinders, 20 H. P.
Sliding Gear speed change.
Three forward speeds and reverse.
Bevel Gear transmission to divided rear axle.
Wheel Base, Model D. 80 inches.
Model F. 97 inches.
Tires, Model D. 30 x 3½.
Model F. 32 x 3½.
Weight, Model D. 1,750 lbs.
Model F. 1,825 lbs.
Side or rear entrance tonneau, seats four or five passengers.

PRICE:—

Rear Entrance Tonneau, Model D. $1,700.
Side Entrance Tonneau, Model F. $1,850.

EXPERIENCE: Fifteen years ago the Sintz Gas Engine Company built a practical and successful automobile that covered thousands of miles and was ten years in advance of the times. Constant study and years full of valuable, practical experience in the building of thousands of Gas Engines, are the secret of our ability to produce a reliable Touring Car for $1,700.
Send for full description of this up-to-date car.

We build Practical, High-Speed Auto Boats and Yachts, Marine Gasoline Engines, both two and four-cycle—one to four-cylinder, from 2½ to 100 H. P. Fifteen years' experience. Send 10c. for large Marine Catalogue.



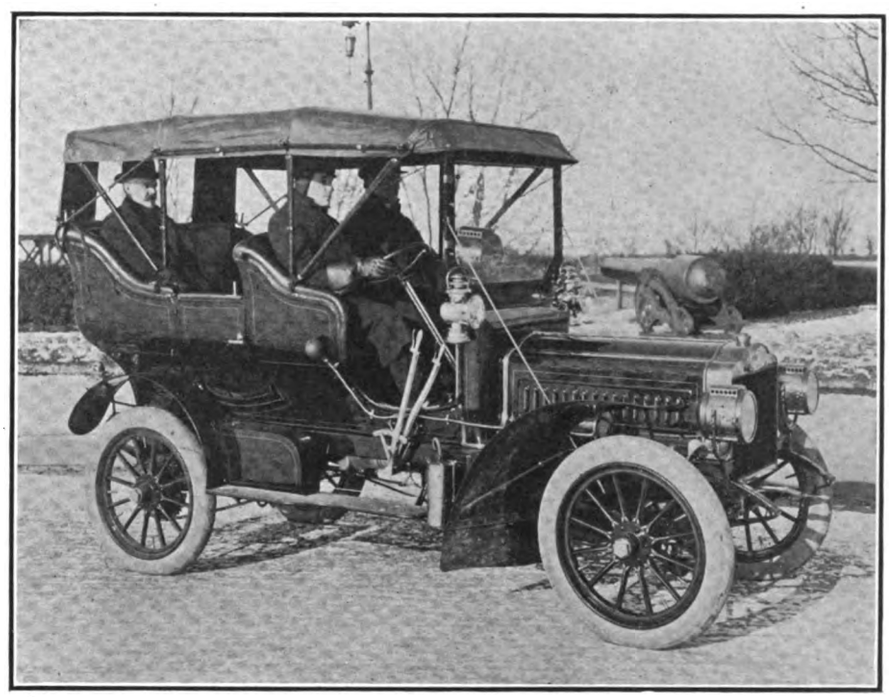
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Successors to { SINTZ GAS ENGINE CO.
MICHIGAN YACHT & POWER CO.

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A Sprague Extension Top on a "Thomas Flyer"; recognized as the correct thing in tops.

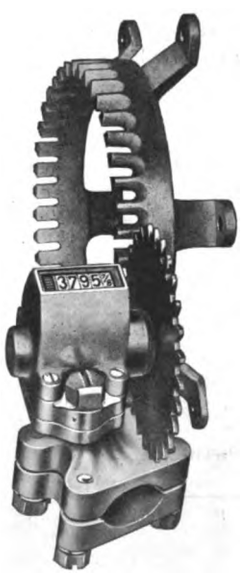
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Send for Catalogue.

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Veeder



ODOMETERS FOR MOTOR CARS

will be on exhibition at our spaces at New York, Chicago, Detroit, Cleveland and Boston, where we shall be very glad to talk with manufacturers of cars concerning the special discount we make to those who equip their output with Veeder Odometers.

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Automobile owners who wish to see the odometers in actual operation should feel perfectly free to come in and ask all the questions they choose. That is what we are there for.

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Cyclometers, Odometers, Tachometers, Counters and Fine Castings.

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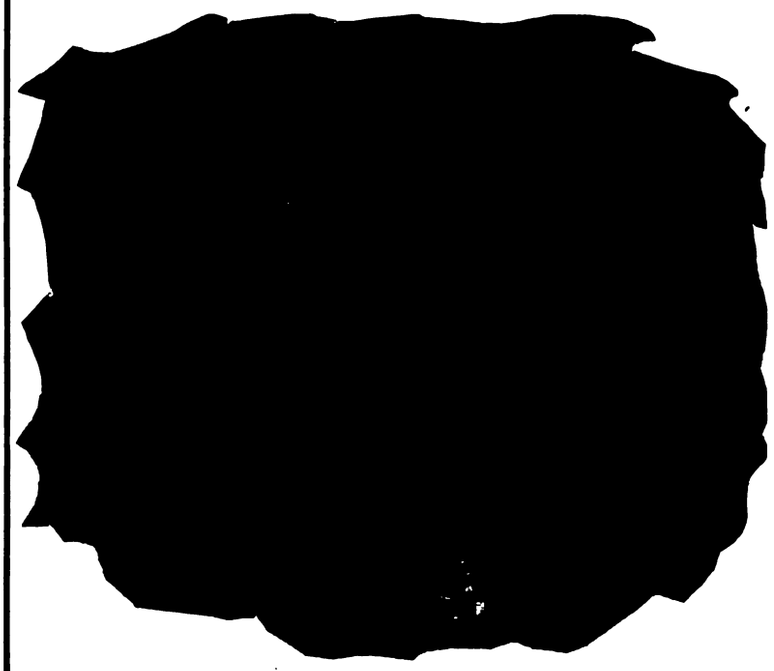
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Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Trade

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

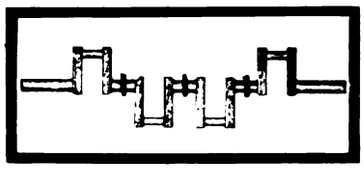
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Garages and Individual Owners who have had most experience use exclusively

Rome Linseed-Oil Soap

FOR CLEANING CARS.

There are mighty good reasons for it, too. They will readily suggest themselves to any one interested.

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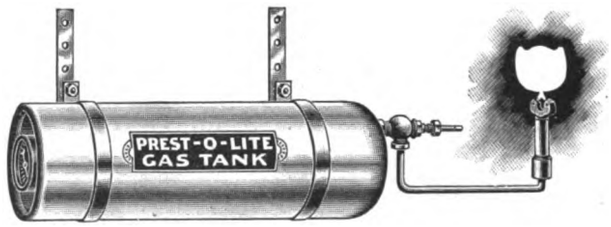
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put it up in barrels, half-barrels and pails, and sell it cheaper than ordinary soaps.

Send us a trial order—if not satisfactory you get your money back.

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The new system of acetylene lighting for automobiles and launches. More than 1,000 Prest-o-Lite Tanks sold since September 1st. More than 100 of the best agents in America have placed orders for Prestolite Tanks.

TEN THOUSAND Tanks will be sold in 1905. The wide-awake dealers are signing up agencies now. Write us for catalogue and full information.

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The VOLIER DRACON: Special prices to jobbers and dealers who come and see us at the show. This is the horn proposition of the year and you can learn more about it by coming up and asking a few questions than you could by reading all night.

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WHEN YOU USE
FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

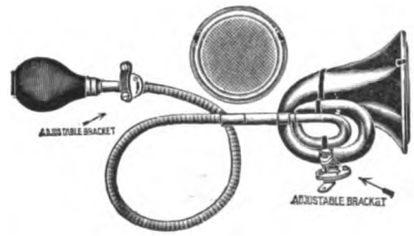
A big and profitable seller to all jobbers, dealers and garages.

OUR PROPOSITION IS INTERESTING.

Send us a trial order.

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LA TUBA HORN



THE latest European idea of a horn. Note extra coil in the body of horn which produces a deep and melodious tone. Two sizes, $10.00 and $12.00 each. complete.

We have in stock forty other sizes and styles of horns Catalog mailed on request.

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Is Known by

ITS EQUIPMENT.

To be perfect it must have perfect tools.

The best imported and domestic cars have B. & S. tools in their kits.



THE BILLINGS & SPENCER CO.,

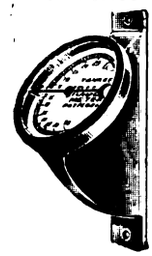
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Largest Manufacturers of Auto Specialties in the World

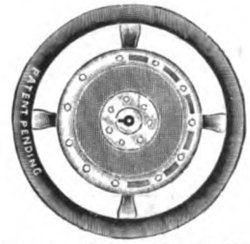
FREE ELECTROTYPES TO CATALOG HOUSES AND OTHERS.

YANKEE GRADE-METER
PRICE $7.50



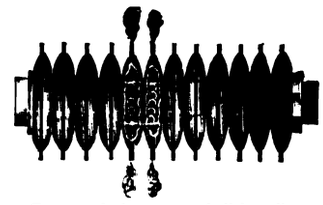
Positively accurate, only dash grade-meter in the world. Easily read from the seat All grades to 35 per cent. up or down.

YANKEE NON-VIBRATING STEERING WHEEL
PRICE $10.00



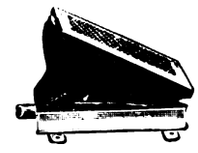
Does away with that uncomfortable feeling in the arms caused by vibrating wheels on long tours. Central diaphragm—made of flexible leather and rubber. Has greater tensile strength for steering purposes than any other wheel.

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Composed of 24 opposed disk radiators on end of exhaust pipe. Burnt gas discharged through thin outer edge of radiator No back pressure because point of discharge greater than bore of exhaust pipe Self cleaning and noiseless.

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Will give louder blast and outwear a dozen bulbs.

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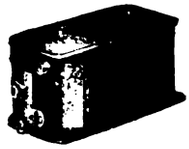
Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

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Specify
BRISCOE RADIATORS
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Aluminum Bodies
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Automobile Chains, Sprockets, Spur and Bevel Gears.

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Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
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Non-Freezing Water Jacket Solution

(SOLVAY PROCESS CO.'S)

will stand 30° below Zero Fahr. without Freezing.

For sale by all Automobile Supply Houses.

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Dynamos, Coils Meters, tc. Send for complete Catalogue.

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Big Four Route TO St. Louis

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Enclosed find $2.00 for which enter my subscription to

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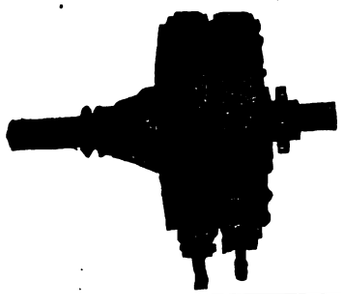
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OUR SPECIALTY.

SLIDE GEAR.
Direct Drive, Three Speeds and Reverse.



Transmission Gears

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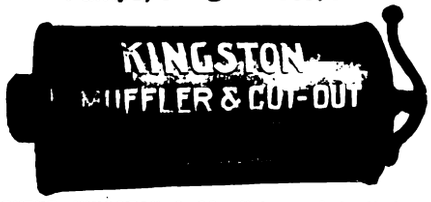
OVER 24,000 IN USE.

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Other Patents Pending.



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An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
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"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 28 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is located in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

THE ACME IMPROVED 1905 MUFFLER.



Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

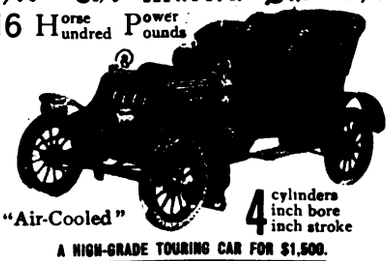
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16 Horse Power Hundred Pounds



"Air-Cooled" 4 cylinders 4 inch bore 4 inch stroke

A HIGH-GRADE TOURING CAR FOR $1,500.

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THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

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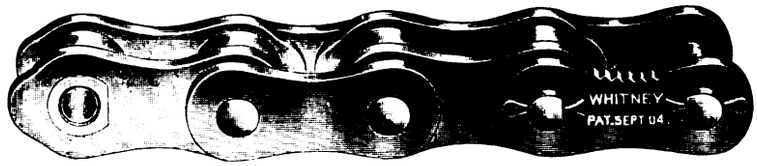
These are **"WHITNEY" STANDARDS** for Roller Chains.

PITCH.	Diameter of Roll.
1 in.	5/8 in.
1¼ in.	¾ in.
1½ in.	7/8 in.
1¾ in.	1 in.
2 in.	1⅛ in.

The PITCH SIZES and DIAMETERS advance uniformly in perfect proportion.

They have broken all records for efficiency, and have been adopted for most of the leading American Cars, including

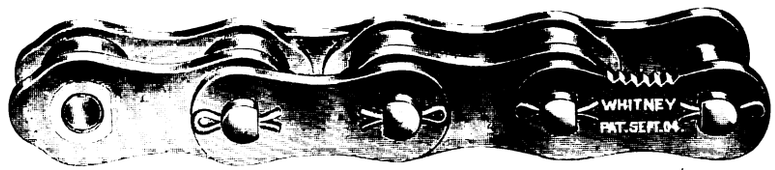
"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "BRAMWELL" "CADILLAC" "COLUMBIA" "CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN" "GROUT" "GAETH" "GIBBS" HARTFORD MOTOR STREET SWEEPER" "KNOX" "LENAWEE" "MITCHELL" "MOLINE" "MATHESON" "MANHATTAN" "OLDS" "POPE-HARTFORD" "PIERCE-RACINE" "PRESCOTT" "QUEEN" "RAMBLER" "STEARNS" "SOMMER" "SNELL" "THOMAS 50 & 60 H. P." "TOURIST" "WAYNE" "WESTERN ELECTRIC"



"Whitney" Roller Chain

RIVETED TYPE.

All links on both sides are Riveted, with exception of one Connecting Link shown.



"Whitney" Roller Chain

COTTER DETACHABLE TYPE.

All links on one side are Riveted and all links on opposite side are Detachable. One link only is considered the Connecting Link, this being distinguished from the others by notches in the top surface.

PITCH.	Diameter of Roll.
1 in.	9-16 in.
1¼ in.	5/8 in.
1½ in.	¾ in.
1¾ in.	1 in.
2 in	1⅛ in.

These are the OLD or COMPETING Standards.

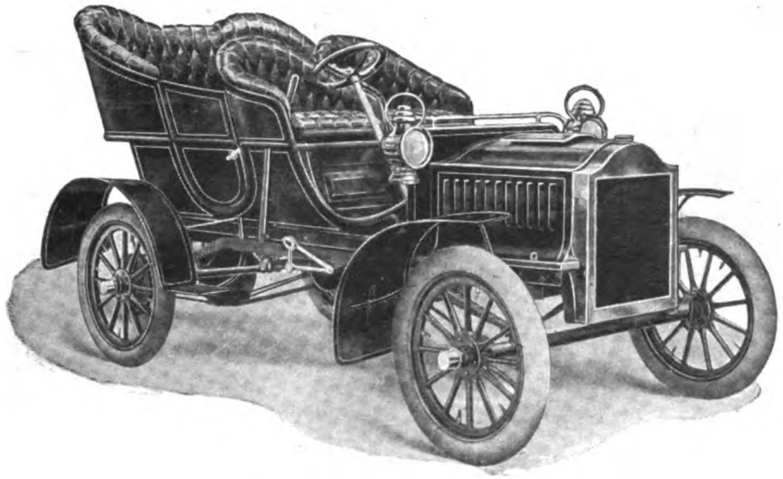
The PITCH SIZES advance uniformly, but the DIAMETERS are irregular and not in perfect proportion.

All Chain Manufacturers have adopted "WHITNEY" Standards for these new sizes 1¾ in. and 2 in. pitch

THE WHITNEY MFG. CO.
HARTFORD, CONN.

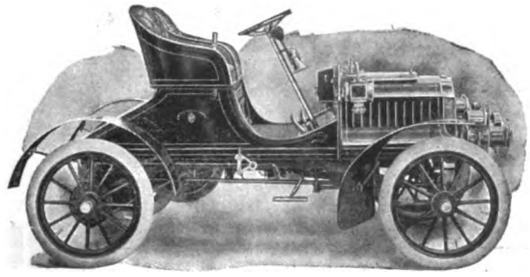
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OLDSMOBILE

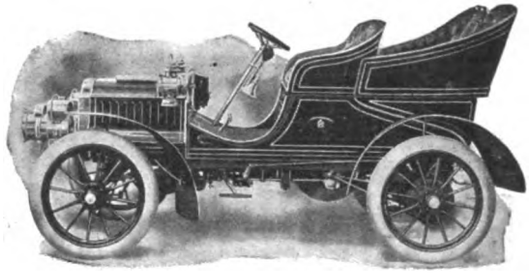


This line— the leaders.

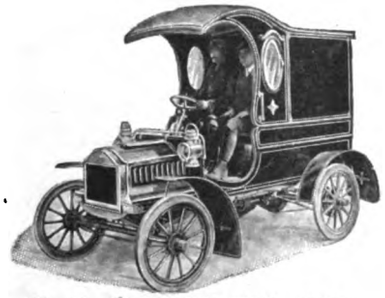
OLDSMOBILE TOURING CAR
Price $1400. 20 h. p.
(2 cylinder Side Entrance.)



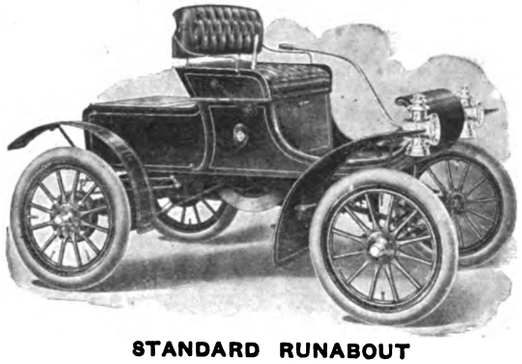
OLDSMOBILE TOURING RUNABOUT
Price $750.00.



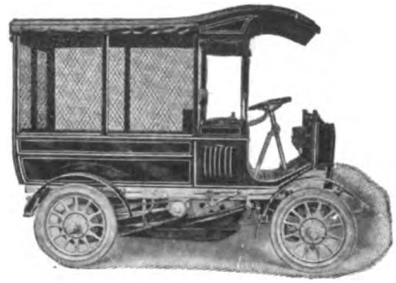
OLDSMOBILE LIGHT TONNEAU
Price $950.00.



10 H. P. DELIVERY CAR
Price $1000.00.



STANDARD RUNABOUT
Price $650.00.



HEAVY DELIVERY CAR
Price $2000.00.
(2 cylinder—16 h. p.)

FOLLOW THE CROWD AND FIND US.

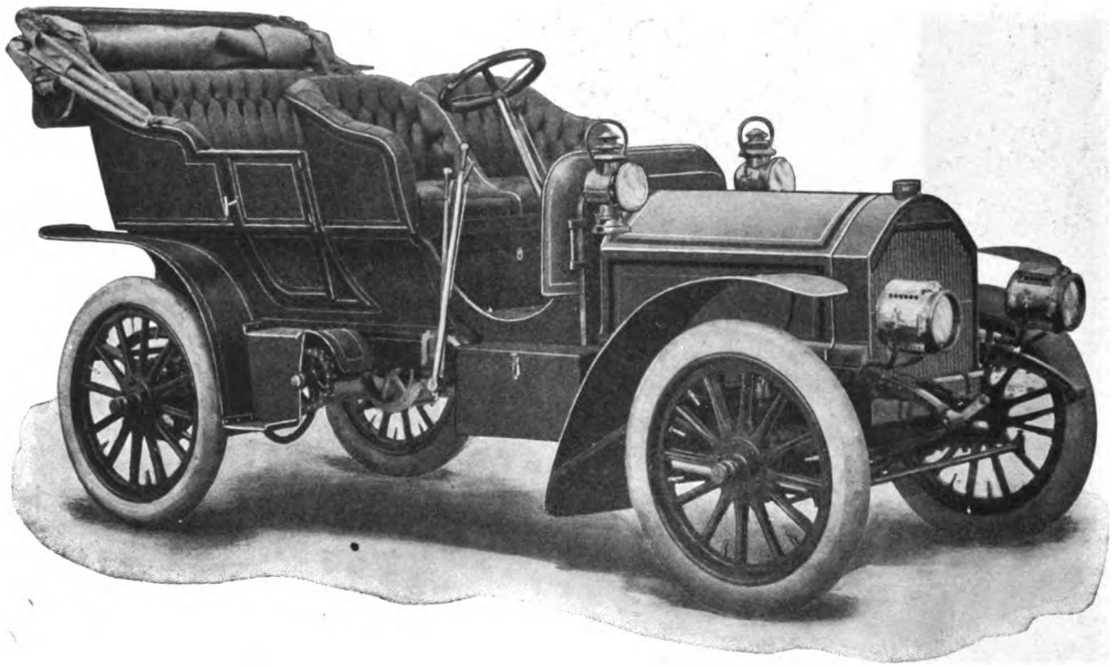
OLDS MOTOR WORKS,

1332 Jefferson Ave., - - - DETROIT, U: S. A.

Member of the Association of Licensed Automobile Manufacturers.

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APPERSON



24 H. P.–5 Passenger Touring Car.

The most comfortable car in touring over American roads, the greatest speed for the rated horse power, and the best hill climber in the country.

Our Four Cylinder Cars thoroughly tested during the past two years.

You are taking no chances in buying an **experimental** car from us.

Each order, practically an individual car, made for each individual customer.

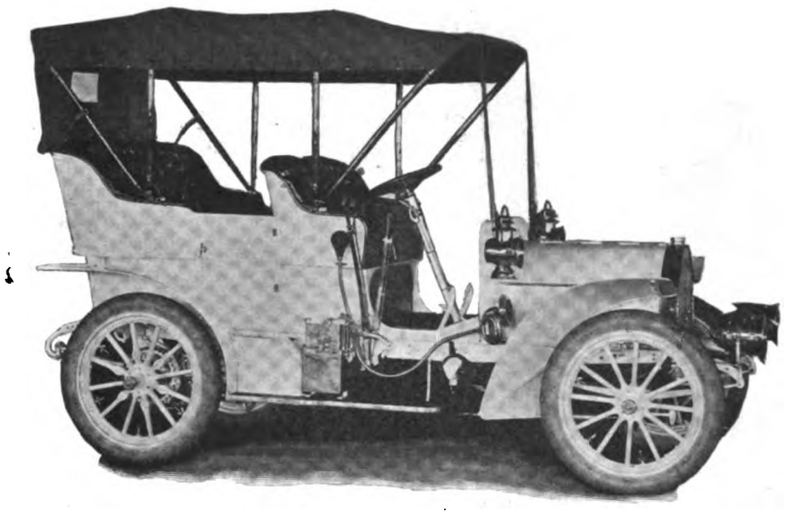
WRITE FOR OUR LARGE 1905 CATALOGUE.

APPERSON BROS. AUTOMOBILE CO., Kokomo, Ind.

Branches: 394 Wabash Avenue, Chicago; 66 W. 43d Street, New York; 43 Columbus Avenue, Boston;

Members Association of Licensed Automobile Manufacturers.

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Locomobile

FOR style and beauty of line; for neat design; for strength and high power in proportion to weight, permit us to call your attention to our 15-20 H. P. GASOLINE TOURING CAR. The same carefully chosen material, the same high quality of workmanship and finish is applied to this model as to our 40-45 H. P. car, which is the highest priced American automobile on the American market to-day. Price, $2,800, including Five Lamps, Tools, Horn, Jack, Storm Covers, Mud Aprons, Spare Parts—all ready for touring. (Tops extra.)

SPECIFICATIONS OF 15-20 H. P. LOCOMOBILE.

BODY .....Side Entrance Tonneau.
MATERIAL..Selected and thoroughly seasoned wood.
SEATING CAPACITY.....Four in addition to driver.
COLOR OF BODY.....Optional.
COLOR OF CHASSIS.....Optional.
WHEELS .....Artillery type, 32 in. in diameter.
TIRES .....Double tube detachable pneumatics.
SIZE OF TIRES....4 in. x 32 in. in front and rear.
LENGTH OF SPRINGS.....36 in. front, 44 in. rear.
WIDTH OF SPRINGS.....1¾ in. front and rear.
CHASSIS FRAME..... Pressed Steel.
MOTOR.....4 cylinder vertical type, 20 h. p.
CYLINDERS.3¾ in. bore, 4½ in. stroke, water cooled.
LUBRICATION.Mechanical, sight feeds on dashboard.
IGNITION....Make and break, gear driven magneto.
COOLING SYSTEM.....Cellular radiator with fan.
PUMP .....Centrifugal type, gear driven.
SPEEDS .....Three forward, one reverse.
BRAKES.....One foot brake, two emergency brakes.
WHEEL BASE.....92 inches.
LENGTH OVER ALL.....11 ft. 9 in.
WEIGHT .....1,800 lbs. approximately.
FUEL CAPACITY.....18 gallons.

GENERAL EQUIPMENT.

(2) Acetylene Headlights, brass finish.
(1) Separate Generator for same, brass finish.
(2) Oil Side Lamps, brass finish.
(1) Rear Signal Lantern, brass finish.
(1) Tool Bag.
(1) Brass Horn with flexible brass tubing.
(1) Carriage Jack.
(3) Rubber Storm Aprons.
(1) Tarpaulin to protect machinery from mud and water.
(1) Tire Pump, Tire Hooks, Repair Kit.

TOOL EQUIPMENT AND EXTRA PARTS.

(1) Monkey Wrench.
(3) Socket Wrenches.
(6) Set Wrenches for hexagonal nuts.
(1) Pet Cock Wrench.
(1) Hub Cap Wrench.
(1) Combination Pliers.
(1) Screw Driver, 4 in.
(1) Tool for compressing valve spring.
(1) Ball Pein Hammer.
(1) Oil can with long spout.
(1) Engine Admission and Exhaust Valve.
(4) Valve Keys.
(1) Valve Spring.
(1) Right Igniter Group.
(1) Left Igniter Group.
(1) Igniter Hammer.
(1) Igniter Anvil.
(4) Lava Bushings.
(10) Mica Washers.

1905 MODELS. ALL 4-CYLINDER CARS.

15-20 H.P. Price, $2,800 Weight, 1,800 lbs. Make and break ignition. Pressed steel frame. Side entrance tonneau.

20-25 H.P. Price, $3,700 Weight, 2,300 lbs. Jump spark ignition. Channel steel frame. Side entrance tonneau.

30-35 H.P. Price, $5,000 Weight, 2,500 lbs. Make and break ignition. Pressed steel frame. Side entrance tonneau.

40-45 H.P. Price, $7,500 Weight, 2,800 lbs. Make and break ignition. Pressed steel frame. Side entrance tonneau.

NEW YORK—Broadway corner of 76th St.
PHILADELPHIA—No. 249 N. Broad St.

The Locomobile Company of America, Bridgeport, Conn.
Member of Association of Licensed Automobile Manufacturers.

CHICAGO—No. 1354 Michigan Ave.
BOSTON—No. 15 Berkeley St.

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G & J TIRES

at the

Ormond-Daytona Races

WALTER CHRISTIE, in car of his own design, fitted with G & J Thread Fabric Tires, won the 50 mile race for the Lozier Trophy.
In the 100 mile international race, Mr. Christie's was the first American car to finish. Mr. Christie covered the 100 miles at a speed of 70 miles per hour.

CHAS. SOULES, in Pope-Toledo, fitted with G & J Thread Fabric Tires, won the five mile race for stock cars $2751.00-$4000.00—time 5:13 1-5; five mile race for stock cars $4001.00-$6000.00—time 5:17 3-5; and ten mile race for stock cars $2751.00-$4000.00—time 10:35 3-5.

CHAS. SOULES, in Pope-Toledo, with G & J Thread Fabric Tires, also took second place, from scratch, in the five mile handicap.

Not a moment's delay in any Race, nor any accident, was due to G & J Tires.

G & J Thread Fabric Tires hold every world's track record, from one to 50 miles.
The G & J Tires used on racing cars are precisely the same thread fabric construction as our regular product. These long distance races run at tremendous speed give added proof of

Safety—Speed—Durability

G & J TIRE CO.

Chicago
429 Wabash Ave.

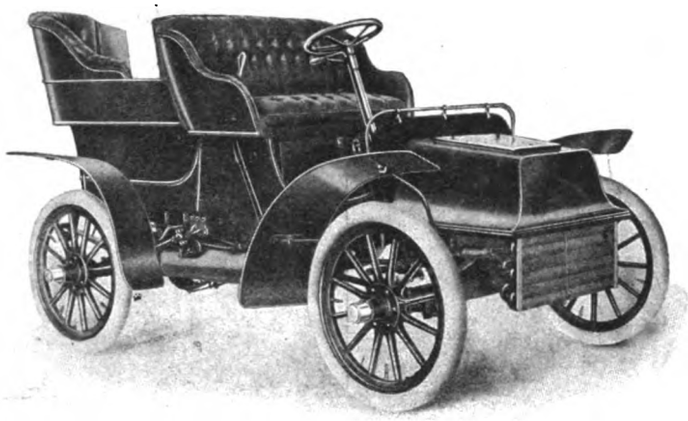
Indianapolis
549-625 E. Georgia St.

Detroit
247 Jefferson Ave.

Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded

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What Are You Looking For?



DETACHABLE TONNEAU TOURING CAR, PRICE, $900.

A powerful four cylinder Touring Car? We have it — thirty horse power motor, three speed, planetary transmission, shaft drive, side entrance body. Or do you want a medium powered, general purpose car? One of our detachable tonneau models is the thing—without tonneau, a smart runabout—capable of high speed—with tonneau, a car that is suitable for touring.

THE CADILLAC

is good in whatever form you take it—for touring or for just running about town—it is always on tap.

AND IT CARRIES THE LOAD—
DON'T FORGET THAT.

THE CADILLAC AUTOMOBILE CO.

Detroit, Mich.

Member Association of Licensed Automobile Manufacturers.

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POPE Waverley ELECTRICS



POPE AUTOMOBILES

MODEL 26 C

as above,
is our removable coupe-top Chelsea.

Specially designed body; superior upholstering, fittings and finish.

In every way the *Ideal Electric Carriage.*

Our 1905 complete line of Electrics affords ample range in design and style, and includes Runabouts, Surreys, Chelseas, Stanhopes, Deliveries, etc.

The Name Bespeaks the Quality.

CATALOGUE ON REQUEST.

POPE MOTOR CAR CO.,
Indianapolis, Ind.

"HALF OF THIRTY-FIVE."



THE ELECTRICAL WIZARD OF MOTORDOM.

Mr. Hart, of the Splitdorf Coil Co., said to an inquirer: "The Duquesne Car is equipped with the best coil known to man! The concern gave us *carte blanche,* as to price, to produce the best we could—and we did so. Single coil sparks four or six cylinders at any speed with "nary a miss"! This proves that neither

FRENCH, GERMAN NOR TIMBUCTOO coils can surpass the best American product—if the manufacturer will pay for the latter."

DUQUESNE CONSTRUCTION throughout is of the same high class. The price of the car—"HALF OF THIRTY-FIVE"—is made possible by its *extreme simplicity,* not by the use of inferior material.

BY THE WAY—that *simplicity* is its greatest attraction for you as a prospective motorist—isn't it?

DUQUESNE CONSTRUCTION COMPANY,
Manufacturers, JAMESTOWN, N. Y.

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Peerless

The Car of Achievement



FOURTH IMPRESSION OF A PEERLESS CAR

CONTROL

Besides being impressed with the beauty, comfort and speed of a Peerless Car, you are equally impressed with the fact that this great power and speed is under absolutely perfect control. A trial of the Peerless demonstrates the fact that a child can easily drive it, so simple it is of operation and so

INSTANTLY RESPONSIVE

To the driver's will. Now it goes as slowly as an electric, and again with a slight pressure of the foot it darts away like a spirited horse. The changes from slow speed to high speed and from high speed to full stop are in reality instantaneous. And perfect control means

PERFECT SAFETY.

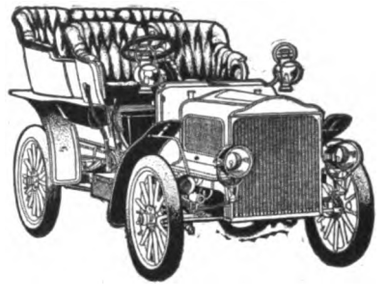
24 H.P.	30 H.P.	35 H.P.	60 H.P.
$3,200	$3,750	$4,000	$6,000

Send for Catalogue now ready.

PEERLESS MOTOR CAR Co.

CLEVELAND OHIO

MEMBER A.L.A.M.



PERFORMANCES

OF THE

15 H.P. WHITE

(Stripped and provided with Wind Shield),

At ORMOND, FLA.

Time Trial

1 Mile, - 53 Seconds

1 Kilometer, 32 4-5 "

Class B Races

851—1432 Lbs.

First in One Mile Race

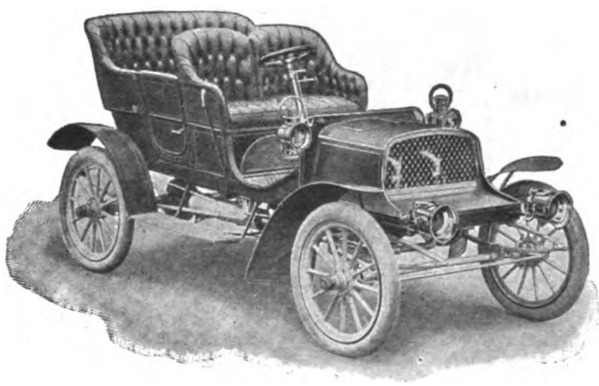
Time, 51 4-5 Seconds.

First in One Kilometer Race

WHITE SEWING MACHINE COMPANY,

CLEVELAND, OHIO.

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PREMIER

4 Cylinder. Air-Cooled.

The Natural Evolution of Mechanical Skill Guided by Practical Experience.

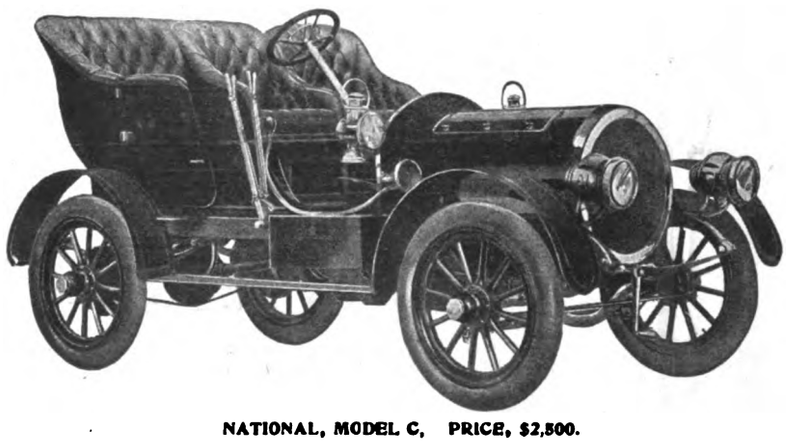
"THE QUALITY CAR."

Side Entrance,	**1905 Model F,**	**$1,500**
Rear Entrance,	**1905 Model F,**	**$1,400**
Runabout	**1905 Model F,**	**$1,250**

Simplicity and accessibility were the two points which warranted the general expression, "No wonder it's practical," from all visitors at the New York and Chicago Shows.

WRITE FOR DESCRIPTIVE CATALOGUE.

PREMIER MOTOR MFG. CO., No. 1003 Georgia St., INDIANAPOLIS, IND.



NATIONAL, MODEL C, PRICE, $2,500.

NATIONAL

Model "C"

"GOES THE ROUTE."

With NATIONALS You Lead— Others Follow.

Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
Five lamps, Generator and horn.
Tires, 34 x 4. Positive oiling.
Luxuriously upholstered in leather.
Governor. Duplex throttle control.
Four cylinder 4¼ x 5 vertical.
Bevel gear drive.

Double ball bearing slide gear transmission—direct on high.
Hardened steel gears.
Gear driven commutator.
Rear wheels revolve on double ball bearings on outside axle tube.
All weight taken off inner axle and differential.
Spherical drive case.
Internal expanding metal to metal brakes.
Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905.

National Motor Vehicle Co.,

1007 E. Twenty-Second St., Indianapolis, Ind.

WRITE NOW.



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10%

of the Cars exhibited in the New York Automobile Show **were on Solid Tires,**

65%

of the 1905 models were fitted with

FIRESTONE SIDE-WIRE TIRES

Three times more Firestone than any other make. Substantiating our claim that it is the

Standard Solid Tire

It has made possible the success of the Commercial Automobile of to-day.

Use it for long and economical service, durability and ease.

The most resilent solid tire made.

HIGHEST AWARD AT ST. LOUIS, 1904.

Write for our Gold Medal Booklet.

FIRESTONE TIRE & RUBBER CO.,

Akron, Ohio.

Branches:

New York: 1788 Broadway. Boston.

Philadelphia: 926 Arch Street. St. Louis.

Chicago: 1550 Wabash Ave. San Francisco.

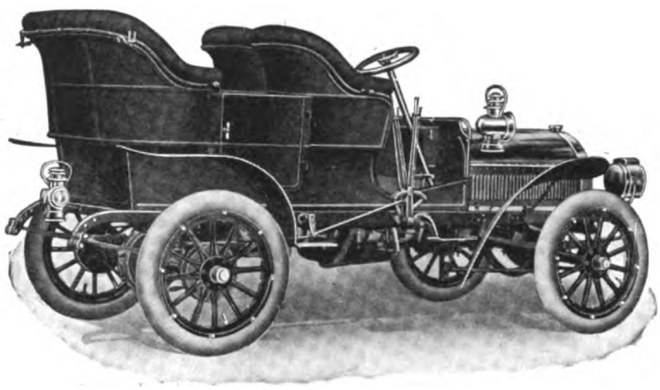
Will Exhibit at Chicago and Detroit.

STEVENS-DURYEA

New 20 Horse Power Four Cylinder

TOURING CAR

MODEL "R"



STEVENS-DURYEA TOURING CAR

MODEL "R"

is in a class by itself.
Embodies all the requisite qualities of a high-grade car.

Great Strength—High Power, Light Weight, are three vital essentials perfectly combined in our latest product.

PRICE, $2500.00,

including standard equipment.

ASK YOUR AUTO AGENT.

Send for beautifully illustrated 32-page booklet, containing full details.

AGENTS: Write for special proposition on unoccupied territory.

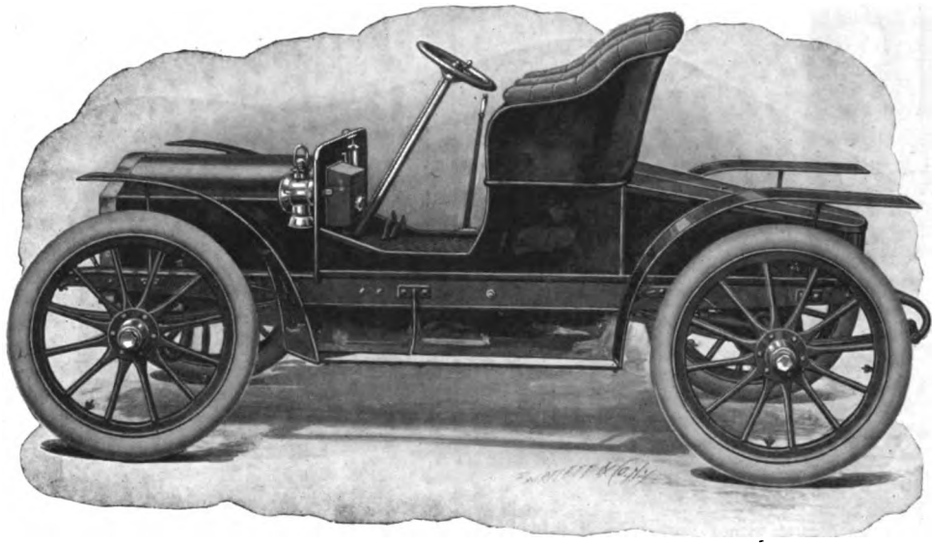
J. STEVENS ARMS & TOOL COMPANY,

690 Main Street,

CHICOPEE FALLS, MASS.

Members Association of Licensed Automobile Manufacturers.

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ORIENT TOURING RUNABOUT, with Semi-Racing Body, 16 H.P., Model E. Price $1500.

THE ORIENT RUNABOUT

SEMI-RACING BODY.

Price, $1500. With Detachable Tonneau, $1650.

This car completes your line—just fits right in where there is a gap—between the low priced light cars and the big touring cars.

It is very light and fast—will easily do forty miles an hour, with an extra link held in reserve. Has the beautiful, clean cut, powerful lines of the high-priced imported cars—in fact, an owner would be proud of the appearance of this car in ANY company.

With the detachable tonneau this Runabout is the ideal car for business and professional men who wish to use a car as a runabout during the week, and as a family car on Sunday.

The Model E is remarkable as being the only Runabout of 16 H. P., or less, having all the engineering features of the larger cars—4-cylinder, vertical fore-and-aft motor, direct drive, sliding gear transmission, three forward speeds (and reverse), Positive Air-Cooling by means of direct air-blast from a powerful 4-bladed fan, and full Mercedes type hood.

Catalogue, showing all these:

TOURING CARS.	
Model E, Touring Runabout (semi-racing body), 16 H.-P..	$1500
Model E, with detachable Tonneau, 16 H. P.	1650
Model F, Light Touring Car, with Tonneau, 16 H.-P.	1650
Model G, Touring Car, 20 H.-P.	2000
Model de Luxe, Touring Car, 20 H.-P.	2250

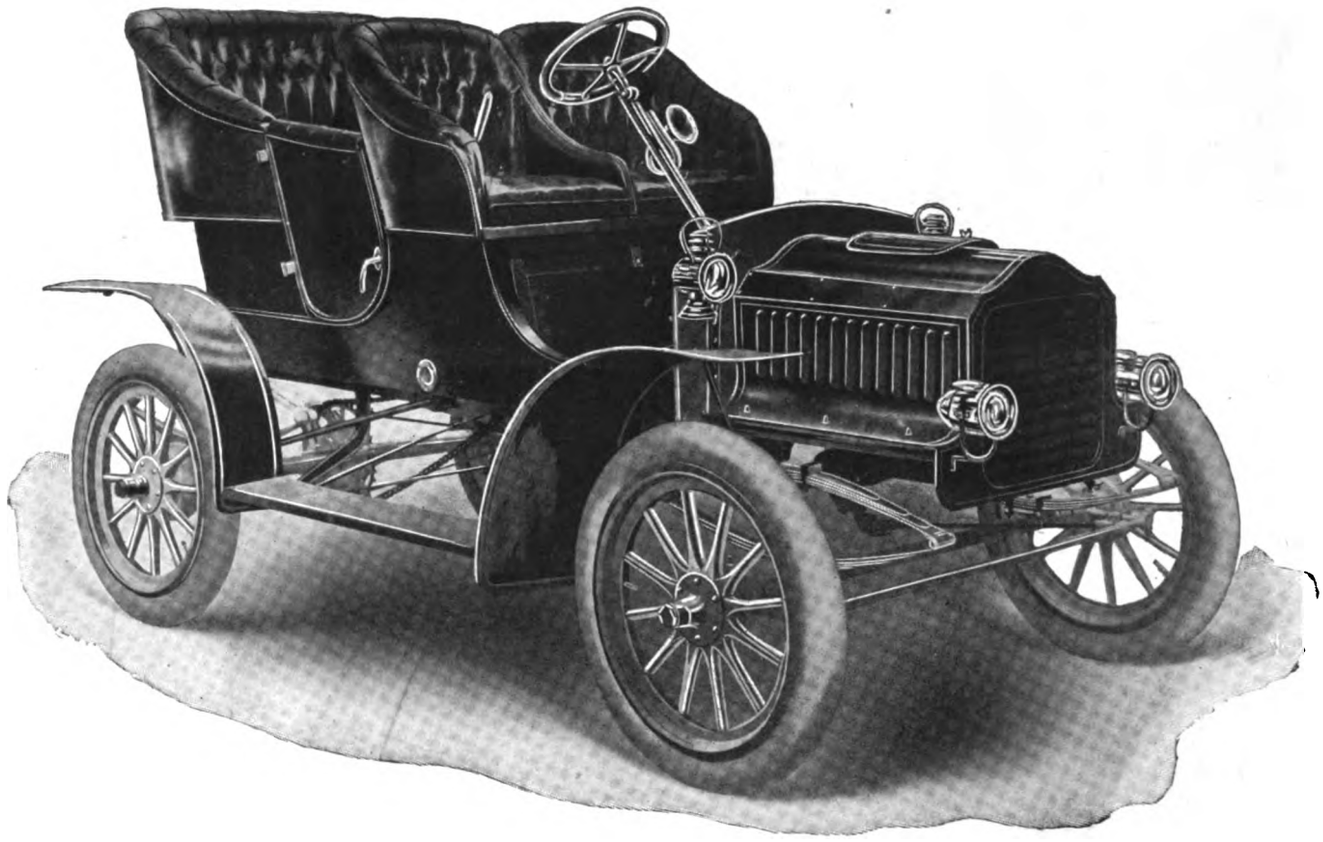
BUCKBOARD LINE.	
Buckboard, Model A, 4 H.-P.	$375
Surrey, Model B, 4 H.-P.	450
Runabout, Model C, 4 H.-P.	475
Tonneau, Model D, 4 H.-P.	525

WALTHAM MANUFACTURING COMPANY,

Members of Association of Licensed Automobile Manufacturers.

Factory: WALTHAM, MASS. **General Sales Offices: 44 BROAD ST., NEW YORK.**

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FORD MODEL "F."

Model "F" has behind it the prestige of "Ford Success." It is designed for Automobile users who want a practical and useful touring car at a price which makes such a vehicle a profitable investment, rather than an expensive luxury. For actual reliability, attractive style and economy of maintenance, the Ford Model "F" is easily ahead of any two-cylinder car made.

SPECIFICATIONS OF MODEL "F."

Price—$1200.00.
WEIGHT—1400 lbs.
MOTOR—Ford two cylinder horizontal opposed.
WHEEL BASE—84 inches.
TREAD—Standard wagon.
WHEELS—30 inches.
TIRES—3½ double tube optional.
MAXIMUM SPEED—35 miles an hour.
CAPACITY GASOLINE TANK—9 gallons.
CAPACITY OIL RESERVOIR—3 pints.
COOLING WATER CAPACITY—4 gallons.
COLOR—Rich dark green, yellow running gear.
UPHOLSTERING—Black, of best leather, handsomely tufted.
EQUIPMENT—2 side oil lamps, post horn and necessary tools.

We want our friends, critics and competitors to examine this car. Full information about all our 1905 cars is given in our new catalogue. Send for it to-day and get posted on the most advanced types of American Automobile Construction.

FORD MOTOR COMPANY, - Detroit, Mich.

Canadian Trade Supplied by Ford Motor Co. of Canada, Ltd., Walkerville, Ont.

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MORGAN & WRIGHT INNER TUBES

are used (in many cases are ***demanded***) by users of ***all*** brands of auto tires.

They are ***recognized*** as the most satisfactory—because the most serviceable—tubes made.

We manufacture an immense quantity of them in addition to those used in **M. & W.** tires.

They are called for by dealers. repairmen and users ***everywhere.***

☞They have saved many a bad tire from ***going*** to the bad.

A WORD TO THE WISE.

MORGAN & WRIGHT, CHICAGO.

NEW YORK, DAYTON, DETROIT, ATLANTA, ST. LOUIS, SAN FRANCISCO.

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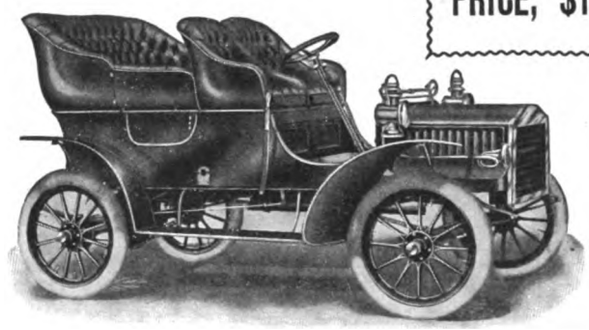
THE MICHIGAN

Two Models "E" and "D"

LIGHT TOURING CARS for 1905

"THE CAR OF POWER."

MODEL E
PRICE, $1,250



This superb new creation for the coming season must be seen to be appreciated. It first appeals to the purchaser by its beauty, then it satisfies him by its speed, strength and durability.

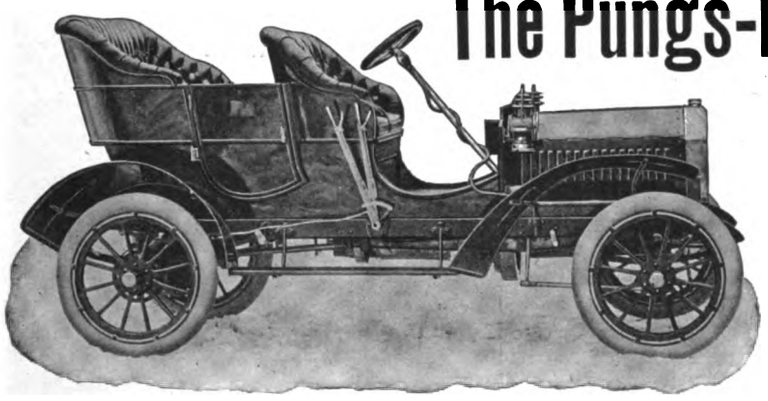
These cars have our tried and tested 1904 Motors, 14 horse power, 2 cylinder, horizontal, opposed. Strong planetary transmission, Warner differential, Hill precision oiler, Kingston or Schebler carburetor, expanding rear-hub brakes, full elliptic springs, 86 inch wheel base, 30 inch wheels, 3½ inch tires, side entrance body, individual front seats.

MADE BY

Michigan Automobile Co., Ltd.,

Kalamazoo, Michigan

The Pungs-Finch 4 Cylinder Touring Car



MODEL F.

Motor—Four cylinders, 20 H. P.
Sliding Gear speed change.
Three forward speeds and reverse.
Bevel Gear transmission to divided rear axle.
Wheel Base, Model D. 80 inches.
Model F. 97 inches.
Tires, Model D. 30 x 3½.
Model F. 32 x 3½.
Weight, Model D. 1,750 lbs.
Model F. 1,825 lbs.
Side or rear entrance tonneau, seats four or five passengers.

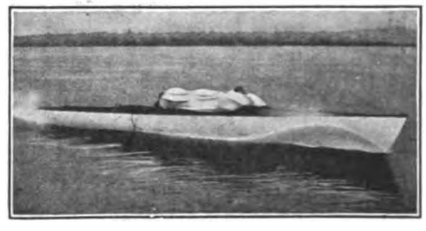
PRICE:—

Rear Entrance Tonneau, Model D. $1,700.
Side Entrance Tonneau, Model F. $1,850.

EXPERIENCE: Fifteen years ago the Sintz Engine Company built a practical and successful automobile that covered thousands of miles and was ten years in advance of the times. Constant study and years full of valuable, practical experience in the building of thousands of Gas Engines, are the secret of our ability to produce a reliable Touring Car for $1,700.

Send for full description of this up-to-date car.

We build Practical, High-Speed Auto Boats and Yachts, Marine Gasoline Engines, both two and four-cycle—one to four-cylinder, from 2½ to 100 H. P. Fifteen years' experience. Send 10c. for large Marine Catalogue.



PUNGS-FINCH CO., Detroit, Mich.

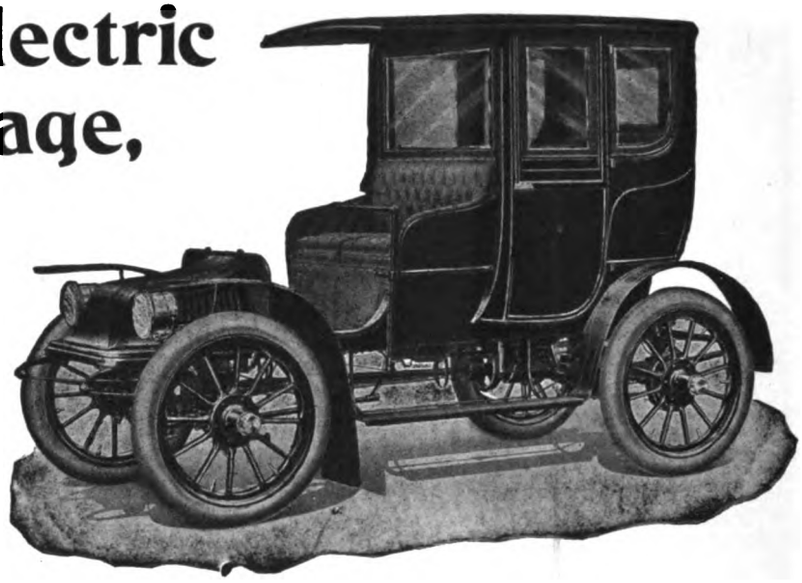
Successors to { SINTZ GAS ENGINE CO. / MICHIGAN YACHT & POWER CO.

New York Representative, DUERR-WARD & CO. *Chicago Representative, WILSON MOTOR CO.*

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THE BAKER ELECTRIC

The Baker Electric Depot Carriage,



The Most Elegant of all Electrics.

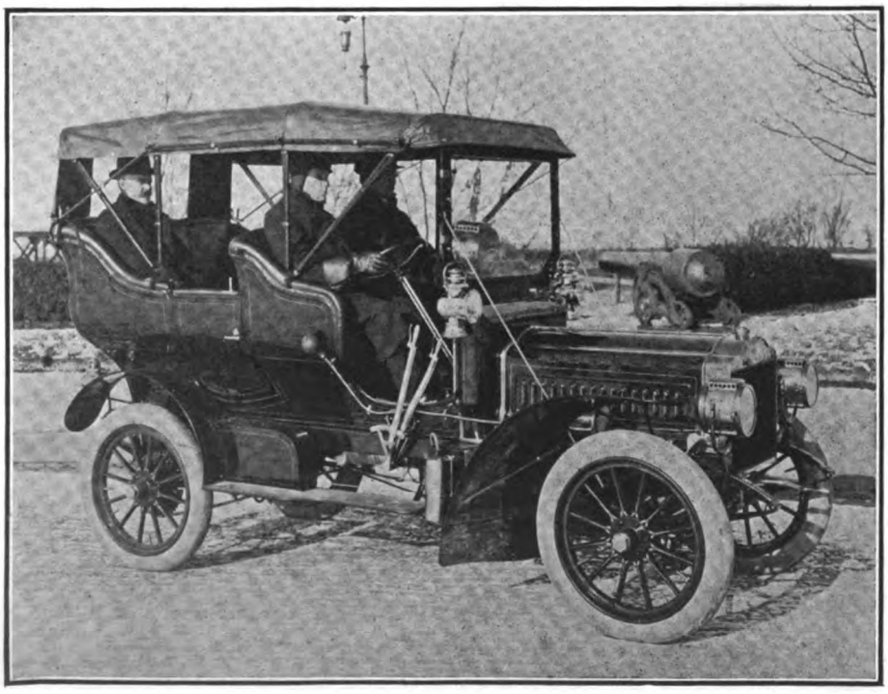
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RUNABOUTS, STANHOPES,
SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.

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COL. SPRAGUE'S CANOPIES.



A Sprague Extension Top on a "Thomas Flyer"; recognized as the correct thing in tops.

See our Exhibit at New York Chicago and Cleveland Shows.

Send for Catalogue.

The Sprague Umbrella Company,

Norwalk, Ohio,
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Cut your tire expenses in half,

use Michelin.

Michelin Tire American Agency,

Incorporated.

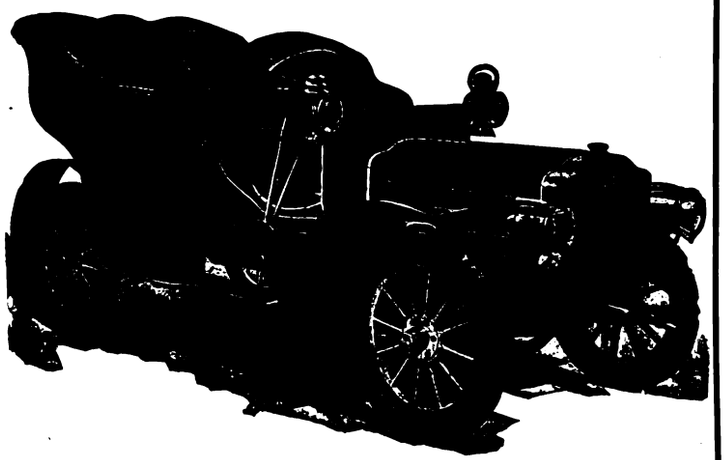
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E. D. WINANS, Gen'l Mgr.

DON'T YOU THINK SO?

The popular automobile of to-day must possess something besides a handsome body and wheels that will go 'round! The Thomas "Flyer" touring car possesses such a number of safety devices, anti-friction, anti-wear, fool-proof and lubricating devices, that it takes a catalogue to tell it all. May we send one?



THOMAS 50 HORSE VICTORIA, $3,500.

At the New York, Philadelphia, Chicago and Detroit shows, the Thomas "Flyer" booth was the center of attraction. Such a line has never been offered before.

Thomas 40 Horse Touring Car (4 Cylinders),	$3,000.
Thomas 50 Horse Touring Car, with Victoria top,	$3,500.
Thomas 50 Horse Limousine,	$4,500.
Thomas 60 Horse Touring Phaeton (6 Cylinders),	$6,000.

E. R. THOMAS MOTOR CO.,

1210 Niagara Street, BUFFALO, N. Y.

Members of Association of Licensed Automobile Manufacturers.

THIS AMERICAN,

MR. B. A. GRAMM,

the Designer and Builder

of the

1905 Logan

says:



Let American people
Of American feelings
Get American cars
And American roads
Needs American Construction.

LET US TELL YOU ABOUT

"THAT CAR OF QUALITY."

Logan Construction Co., Chillicothe, Ohio.

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Two Impulses with Every Revolution

This is the famous Elmore Pathfinder, which has demonstrated beyond a doubt the superiority of the two-cycle engine over the four-cycle engine. The most significant feature of the American Automobile situation to-day is the complete triumph of this impulse-every-revolution idea, or, with two cylinders, two impulses every revolution, as exemplified in the Elmore. That the Elmore does produce a constant torque; that it does utilize every particle of power and put a stop to waste energy; that it will take the steepest hill or roughest road at high speed, and that it has the most reliable self-starting engine in the world—for each and every one of these claims overwhelming proof has been produced.

The whole trend of expert and popular opinion is rapidly being directed toward the two-cycle engine.

You owe it to yourself to see this car, which will astonish you, not only by its fine appearance, but by its excess power and its extraordinary control on the high speed.

Send for our full line of literature, the booklet illustrating the 6,000-mile trip, our catalogue, explanation of our engine, and the opinions of people who have used our cars, all sent free, or, if you wish, we will send a 10x12 photograph of the Pathnder on receipt of 10 cents in stamps.

ELMORE MANUFACTURING COMPANY,

1104 Amanda Street, CLYDE, OHIO.

Members of Association of Licensed Automobile Manufacturers.

"The Maxwell"

There is not one complicated detail throughout "Maxwell" construction. The number of parts has been cut down to a minimum, and each part has been treated as a special problem and carefully worked out to perfection. It is fundamentally a car easy to explain, easy to understand and easy to operate.

The owner of a "Maxwell" is absolutely sure of two things.

First, that no car in the market AT ANY PRICE is more reliable than his, and, second, that he owns the one car before the public to-day in which, through its rare simplicity of construction, there is nothing to do but ride.

The "MAXWELL" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and accessible in every part. They have Bevel Gear Drive. METAL BODIES. Transmission Case and Crank Shaft cast in one Aluminum casting. "Perfectly simple and simply perfect."

16 H. P. TOURING CAR, $1400. 8 H. P. TOURABOUT, $750.

MAXWELL-BRISCOE MOTOR CO.

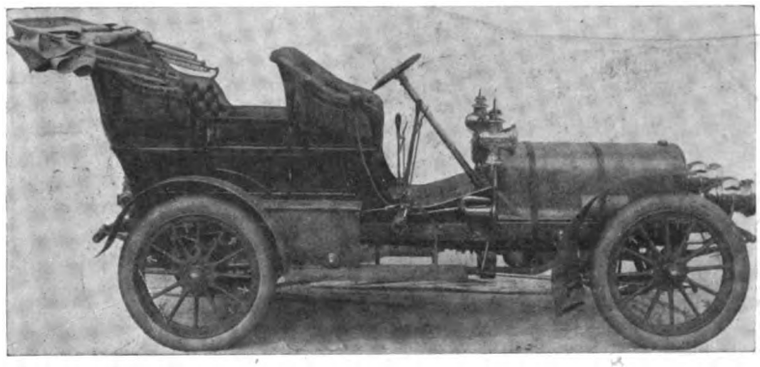
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SIMPLICITY, POWER, WORKMANSHIP, DESIGN.

These were the points which won for us the unqualified success the "ACME" CARS achieved at the Shows.



Type VIII, Complete as illustrated, $2,750.

Runabout. Type X, 16 H. P. 2 Cylinder: vertical, $1,000 **Opera Bus, seats 6 - - - $2,000**
Runabout, Type IX, 8 H. P., 1 Cylinder, vertical, $800 **Type VIII. 4 Cylinder, 30 H. P., at - . $2,750**

THE BEST AGENCY PROPOSITION IN THE WORLD.

ACME MOTOR CAR CO., - - - - - Reading, Pa.

BOSTON MOTOR CO., 43 Columbus Ave., Boston, Mass. Mass. Distributors.

ACME MOTOR CAR CO. OF NEW YORK, 941-943 8th Ave., New York, N. Y. N. Y. and N. J. Distributors.

DEVLIN & CO. 1407 Michigan Ave., Chicago, Ill. Western Distributors.

LIBERTY AUTOMOBILE CO., 205 Shady Avenue, Pittsburg, Pa.

SOUTHERN AUTOMOBILE CO., Atlanta, Georgia.

GOODRICH TIRES

NEW YORK, 66-68 Reade St. and 1625 Broadway.
CHICAGO, 141 Lake St.
DETROIT, 80 E. Congress St.
BOSTON, 157 Summer St.
BUFFALO, 9 W. Huron St.



The unequaled product of twenty years' experience in tire making is the tire for your car. Buy

Goodrich Clincher Automobile Tires

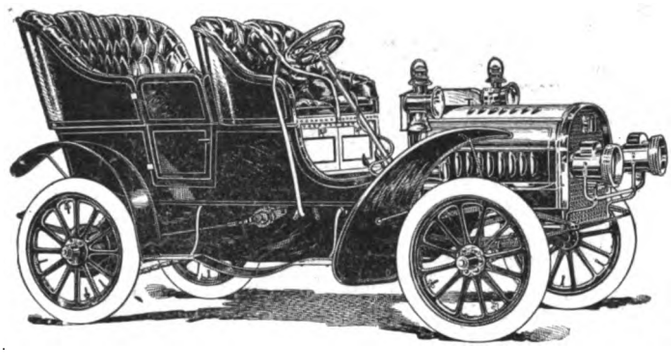
and you will have greatest satisfaction and least expense. Can be quickly put on or taken off, but users of Goodrich Tires seldom avail themselves of this, because "the original Clincher Tire" meets the severest requirements of track and road. Awarded Grand Prize at St. Louis. Write direct or to branches for detailed information.

THE B. F. GOODRICH CO.
AKRON, OHIO.

SAN FRANCISCO, 392 Mission St.
DENVER, 1444 Curtis St.
PHILADELPHIA, 909 Arch St.
CLEVELAND, 420 Superior St.
LONDON, E. C., 7 Snow Hill.

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Rambler



SURREY, TYPE ONE, 18 H. P., $1350.

IMMEDIATE DELIVERY.

Actual use has demonstrated that this vehicle is exactly suited to the needs of persons of moderate means for a beautiful, roomy, powerful and reliable family touring car.

Its operation is both simple and natural. The ignition of the spark is entirely automatic. The brakes are operated by pedals, not by levers. With the steering wheel and throttle attached to it, operable by one hand, the other hand is always free to operate the clutches by the single lever, and as many women and children have found, no confusion is possible.

The working parts are easily inspected by removing the hinged floor, and seat falls, and it is never necessary to crawl under the machine, nor to keep a mechanic to look after repairs.

SIX OTHER MODELS, $750, $850, $1250, $2000, $3000.

Send for the current issue of THE RAMBLER MAGAZINE (free) and learn with what remarkable facilities RAMBLERS are made, and better understand why we can undersell other makers of fine cars.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

New York Agency, 134 West 38th Street.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 302-304 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, February 16, 1905. No. 21

CLAIM OF BASIC PATENT

Brought to Light by Litigation Aimed at Ford—Other Suits to Follow.

What promises to be an interesting development in patent litigation came to the surface last week, when suit was entered against John Wanamaker, as agent for the Ford Motor Company, of Detroit, Mich., in the United States Circuit Court in New York, for alleged infringements of patents covering the Ball transmission and reversing gear owner by the New York Gear Company, of Brooklyn, N. Y., which company is composed of Frederick J. and George Ball, the inventors.

The suit had been anticipated for some time, owing to the fact that the New York Gear Company had warned a number of automobile manufacturers that they intended to take action to prevent infringement of their patents. As a result of this warning, a number of concerns, it is stated, have taken out licenses, but quite a few totally ignored it, and, in consequence, other suits are in prospect against both members of the Association of Licensed Automobile Manufacturers and those outside of it.

The Ford Motor Company, through its attorneys—to whom Wanamaker turned over the case—have put in an appearance, and their answer is returnable the first week in March.

The New York Gear Company claim that theirs is a basic patent—No. 641,[illegible], granted April 9, 1901, covering the application on reversing gears and transmissions, and two additional patents covering improvements on the original, No. 749,516 and No. 749,602, both of which were granted January 12, 1904.

Following is the inventor's claim in the original patent, 671,747:

In combination, a rotary driving shaft having a gear wheel fixed thereto, a concentric power-transmitting sleeve loosely mounted on the shaft, and having a gear wheel fixed thereto, a pair of drums concentric with the driving shaft, a secondary shaft mounted in one of said drums and having two gear wheels fixed to rotate together in one of the said drums, one of the gear wheels intermeshing with the gear wheel on the driving shaft, an intermediate gear wheel in said drum for connecting the second gear wheel on the secondary shaft with the gear wheel on the loose sleeve; a gear wheel fixed to the other drum, concentric with the driving shaft, a gear wheel located in said drum and fixed to rotate with the said gear wheels on the secondary shaft and a pair of intermediate gear wheels located in said last named drum for connecting the gear wheel upon the secondary shaft with the gear wheel carried by the drum, whereby when one of the drums is held stationary the drive shaft will rotate the sleeve in one direction, and when the other of the drums is held stationary the driving shaft will rotate the sleeve in the reverse direction, substantially as set forth.

Midgley Becomes a Hartford Advisor.

Thomas Midgley, head of the Midgley Mfg. Co., of Columbus, O., and inventor of the well-known pressed steel wheel bearing his name, has been retained by the Hartford Rubber Works Co. in the capacity of consulting engineer, arrangements to that effect having been consummated with Vice-President William Seward, at the Chicago show, last week.

As Mr. Midgley's services to the Hartford Co. will be in a purely advisory capacity, he will, of course, continue to actively manage the fast expanding Midgley Mfg. Co., which, in addition to turning out a large number of pressed steel wheels, is manufacturing all the new perfected Dunlop tire rims, in the development of which Mr. Midgley bore no small part.

Fire at Pungs-Finch.

Fire which started in the Pungs-Finch Automobile & Gas Co.'s plant, at 1524 Jefferson avenue, Detroit, Mich., on Monday last, did damage to the extent of $25,000 and effectively crippled the boat building end of the works. Insurance to the amount of $19,000 is divided among fifteen companies. Fortunately it was confined to the buildings housing that department, so that the automobile department is running, as usual.

Leinbachs now a Corporation.

Leinbach Bros.' Co., Detroit, Mich., have filed articles of incorporation with the county clerk, capitalizing at $10,000, of which $7,000 worth of the stock has been paid in property and business of the old firm of Leinbach Bros. The stockholders of the new company are E. L. Leinbach, Clyde Leinbach and A. W. Muer. The firm will conduct a general automobile business.

MORRIS IS INTERESTED

Knows Nothing of an A. C. A. Show and Would Welcome Information.

"Rumor and report to the contrary notwithstanding, I know nothing of any development thus far in the matter of the A. C. A. holding a show," said Dave H. Morris to a Motor World man this week. "I'm interested in learning myself. Who's floating all these rumors, and where did they originate?" Upon being informed, he continued: "There can't very well be any definite news in regard to the fact of whether or not a show will be held under the auspices of the A. C. A., or where it will be held, until at least there has been a meeting of the show committee of that body, and up to the present none has taken place. General Smith, H. B. Shattuck, one or two other gentlemen whose names I do not recall at the moment, and myself, as an ex-officio member, comprise the committee in question, and I can assure you that there has been no meeting, and the matter of a show has not been discussed officially to my knowledge."

In reply to the question as to whether developments in this direction are to be looked for speedily, he said: "No meeting has been called for any date in the near future, but as to whether one will be in the course of the next week or so, is a question I cannot answer. In the meantime, I can neither deny nor affirm the rumors you refer to any further than to say that no call has been issued for a meeting to discuss the matter, and without a meeting of the show committee, where is the news you want to come from?"

How Ramblers Will be Rushed.

Thomas P. Jeffery & Co., Kenosha, Wis., have offered a novel premium to test the capabilities of their employes.

Twenty-five hundred machines ready for the market by the first day of July is the word that has been passed along to the men employed at the plant, and in order to emphasize this demand the company has offered to give to every man in the factory a two weeks' vacation, with full pay, if these cars are made in time. Nor is this all; for the com-

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pany offers the men not desiring to take the vacation two weeks' wages without work, or they may divide the time and take a week's vacation with double pay. The offer will cost the company thousands of dollars, but the managers consider it good business, and it is expected that it will aid materially in getting out the large number of machines needed to fill the orders.

The Week's Incorporations.

Milwaukee, Wis.—Richard F. Mokros Co., under Wisconsin laws, with $8,000 capital; to deal in automobiles. Incorporators: Richard F. Mokros, N. A. Stenzel and Oscar Hehr.

Camden, N. J.—The Adams Storage Battery Co., under New Jersey laws, with $4,000,000 capital. Incorporators: Henry F. Stockwell, Joseph Tyler and E. G. C. Blakeby.

Chicago, Ill.—Peer Automobile Co., under Illinois laws, with $2,500 capital; to manufacture and repair automobiles. Incorporators: Godfrey Johnson, Charles Stilwell and C. C. Bowersock.

Detroit, Mich.—Peninsular Machine Co., under Michigan laws, with $5,000 capital, $1,200 paid in; to manufacture automobile parts. Incorporators: John A. Etzold, John E. White and Otto F. Barthel.

Augusta, Me.—The Atlantic Co., under Maine laws, with $50,000 capital, nothing paid in; to deal in motor vehicles. Incorporators: Jacob R. Huntington, John S. Payen, Howard E. Bartlett, M. H. Simmons, E. F. Whitten, Charles L. Andrews and G. R. Hadlock.

In the Retail World.

In Newburg, N. Y., John McLean has taken up the automobile storage and repair business.

The Keystone Automobile Co., of Pittsburg, has secured the agency in that city for the Locomobile and Stevens-Duryea agency.

The garage at Lincoln, Neb., formerly owned by T. F. Mark has been sold to G. A. Buckingham and Peter F. Peterson, who will continue the automobile business.

M. Brotherson will shortly open an automobile supply and repair house at Nos. 305 and 307 Main street, Joplin, Mo., and will conduct the business under the firm name of the Southwest Automobile Co.

Muncie, Ind., is to have a new automobile garage, which is to be leased by the Machine Electric Co. This company will also handle several standard lines of automobiles, and, in addition to this, the company will undertake repair work.

E. A. Colburn will erect a large garage at Fifteenth street and Colfax avenue, Denver, Col., the strip of ground costing $47,500. The foundation walls will be built so that two additional stories can be added should further demands make it necessary.

The Calvary Church property, Penn avenue and Station street, Pittsburg, Pa., has been puchased by William J. La Fountaine for the Atlas Automobile Co. for a consideration of $85,000. It will be used as a garage by the firm.

York, Pa., will have two new automobile firms in the near future. The New York City Automobile Garage has located at South George and Maple streets, and will handle the Rambler. The other is the Richley Automobile Co., at Nos. 16 and 18 North Beaver street. The latter firm will act as agents for the Cadilac car.

M. & A. M. Now Numbers 101.

The first meeting of the new board of directors of the Motor and Accessory Manufacturers was held at the Auditorium on Wednesday, February 8, 1905. All of the members were present, with the exception of D. J. Post, of the Veeder Mfg. Co., who was in the city, but ill; Howard E. Raymond, of the B. F. Goodrich Co., who was compelled to leave Chicago before the meeting opened, and George L. Weiss, who was absent in the South.

While no important matters of interest came up, the trade situation was carefully gone over and various matters were informally considered. The total membership of the organization was brought up to 101 by the election of the following:

J. H. Williamson Co., Brooklyn, New York; Iron Clad Mfg. Co., Brooklyn, New York; Electric Contract Co., New York City, N. Y.; C. W. Spicer, Plainfield, N. J.; Stolp Mfg. Co., Chicago, Ill.

After the meeting, President Chapin entertained the directors at a luncheon in the Auditorium Annex, the object being to give the new members of the board an opportunity to meet each other socially.

Weaver to Sell Apples.

Charles E. Weaver, of Cleveland, O., known to the trade the country over, has been appointed sales agent of the Dayton Electrical Mfg. Co., makers of the "Apple" igniter, which he will handle in conjunction with other lines. In securing Mr. Weaver the Dayton concern has made a ten-strike, and at the Chicago show, where the deal was arranged, results of his work were apparent in the shape of good orders.

Bad Fire in St. Louis.

A serious fire last week destroyed the garage of the Interstate Automobile Co. of St. Louis. The loss, according to President McNair, amounts to about $20,000. Although an investigation has taken place, the cause of the fire has not been discovered. Nor was any evidence found that it was due to "gasolene, as usual."

Odd Origin of a Fire.

To correct a garbled report by the daily press of a slight fire occurring in his garage recently, Thomas J. Northway, the Rambler agent for Rochester, N. Y., wishes to have it made clear that the conflagration so called was of insignificant proportions, and the resulting damage merely nominal, several hundred dollars in the shape of blistered paint and minor injury to cars and less than $100 to the building.

The fire originated through the explosion of an incandescent light globe which a repairer had hung on a machine he was working on, the globe coming in contact with the carburetter. When it exploded it ignited the gasolene in the carburetter, and before the workman realized what had happened, it spread to the tank on the same machine, containing probably a gallon or two of gasolene. The tank did not explode, but a joint melted and allowed the gasolene to escape. The garage in which the fire occurred is located in a separate building in the rear of the showroom, so that no new cars were damaged.

Jefferson is in Trouble.

The Jefferson Automobile Livery Co., Detroit, Mich., organized October 10, 1903, with a capital stock of $20,000, is to have its affairs aired in the Circuit Court. Louis L. Elbert has filed a bill for the appointment of a receiver and for injunctions to restrain the constable from selling goods and property seized by him under process of the justice's court and to restrain the officers from destroying or mutilating the firm's books. Elbert claims that he owned half of the capital stock, but by fraudulent methods the officers of the concern managed to get it away from him.

Seized De Dietrich Show Car.

De Dietrich & Co., 1 West Thirty-fourth street, New York City, lost a $10,000 four-cylinder car at the Chicago show, in a manner that was not at all appreciated by those in charge of the exhibit. Armed with a writ of attachment, Deputy Sheriff Henry Higgins levied on a car and had it removed from the Coliseum. The writ was signed and sworn to by Walter D. Douglass, a capitalist at Cedar Rapids, Iowa, who declared the De Dietrich Co. owed him $2,700.

Quaker Trade Incorporates Itself.

Judge Bregy, in the Common Pleas Court, Philadelphia, last week granted a charter to the Philadelphia Automobile Trade Association. The association is composed of manufacturers, jobbers and retailers in automobiles, and its object is for the better protection of the trade. The directors are Albert E. Maltby, William Morgan, Percy L. Neel, Robert D. Garden and Charles A. Godshalk.

New Home for Columbias in Chicago.

The Columbia Electric Vehicle Co., Chicago, Ill., has given out the contract for the erection of a two story building on the lots at No. 1,328 to 1,334 Michigan avenue. Construction will be started on May 1, and the building will cost about $40,000. The building will make a valuable addition to Chicago's "Automobile row."

To Make Carburetters in Detroit.

Detroit, Mich., has a new accessory manufactory, doing business under the firm name of The Phelps Vaporizer Co. The new firm will make a specialty of a carburetter for gasolene and all hydro-carbon engines.

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DETROIT DOES ITS TURN

Local Show a Big Success, as Usual, and Without the Aid of Negro Songstresses.

Detroit, Feb. 14.—Sam Miles's show in Chicago may have needed the carolings of a "negro lady" to give it point and interest, but Detroit's display never has required anything of the sort. The singing of bullets and the deep basso of dogs have always been a feature of the local show here, and they are not lacking in the one which was inaugurated last night. It's a sportsman's show as well as one for automobilists, and a good one from both viewpoints. Automobiles predominate, of course, and, drawing directly from such a numerous colony of manufacturers located on the very ground, it goes without saying that it is a large success. Each maker has his best foot forward, and the result is easily pictured, despite the fact that the thermometer, as usual, is hovering around naught.

Those who are exhibiting are as follows:

M. F.—Main floor.
G.—Gallery.

Auto-car Equipment Co., Buffalo, N. Y., Spaces 27, 28, G.—Automobile trucks.

Armstrong & Co., Detroit, Mich., Space 35, G.—Accessories.

American Lubricator Co., Detroit, Mich., Space 5, G.—Century lubricators.

Briscoe Mfg. Co., Detroit, Mich., Space 4, G.—Radiators and fenders.

Badger Brass Mfg. Co., Kenosha, Wis., Space 15, G.—Solar acetylene gas lamps.

Bowser & Co., S. F., Fort Wayne, Ind., Spaces 36, 37, G.—Gasolene outfits.

Blomstrom Motor Co., C. H., Detroit, Mich., Space 20, M. F.—Queen cars.

Cadillac Automobile Co., Detroit, Mich., Spaces 3, 4, M. F.—Cadillac cars

Concentrated Acetylene Co., Indianapolis, Ind., Space 19, G.—Acetylene gas and gas tanks.

Diamond Rubber Co., Akron, Ohio, Spaces 17, 18, G.—Diamond detachable clincher tires.

Detroit Auto. Mfg. Co., Detroit, Mich., Space 30, G.—Accessories.

Detroit Steel Products Co., Detroit, Mich., Space 38, G.—Steel specialties.

Electric Storage Battery Co., Philadelphia, Pa., Space 31, G.—Storage batteries.

Ford Motor Co., Detroit, Mich., Spaces 38 to 41, M. F.—Ford cars.

Firestone Tire and Rubber Co., Akron, O., Space 14, G.—Solid tires.

Fisk Rubber Co., Chicopee Falls, Mass., Spaces 24, 25, G.—Fisk tires.

Fawkes Rubber Co., Denver, Col., Space 22, G.—Fawkes tires.

Gray & Davis, Amesbury, Mass., Spaces 6, 7, G.—Headlight, side and tail oil and acetylene gas lamps.

Goodrich Co., B. F., Akron, O., Space 9, G.—Goodrich detachable clincher tires.

G. & J. Tire Co., Indianapolis, Ind., Space 26, G.—G. & J. detachable clincher tires.

Goodyear Tire & Rubber Co., Akron, O., Space 32, G.—Goodyear detachable clincher tires.

Hammer Motor Co., Detroit, Mich., Space 35, M. F.—Hammer gasolene car.

Hartford Rubber Works Co., Hartford, Conn., Space 8, G.—Dunlop detachable and Hartford and Turner tires.

Imperial Brass Mfg. Co., Detroit, Mich., Space 29, G.—Accessories.

Morgan & Wright, Inc., Chicago, Ill., Spaces 11, 12, G.—Clincher detachable tires.

McDonald, Wessels & Ames, Detroit, Mich., Space 33, G.—Accessories.

Matchless Metal Polish Co., Detroit, Mich., Space 34, G.—Metal polish.

Metzger, W. E., Detroit, Mich., Space 5, M. F.—Agent for Orient, Cadillac, Pope-Toledo, Waverly and Baker cars.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y., Space 11, M. F.—Maxwell cars.

Northern Mfg. Co., Detroit, Mich., Space 6, M. F.—Northern cars.

Olds Motor Works, Detroit, Mich., Spaces 22 to 25, M. F.—Olds cars.

Packard Motor Car Co., Detroit, Mich., Spaces 1, 2, M. F.—Packard cars.

Pope Mfg. Co., New York City, Spaces 7, 8, 9, M. F.—Pope-Toledo, Pope-Hartford, Pope-Tribune gasolene and Pope-Waverly electric cars.

Pungs-Finch Automobile & Gas Engine Co., Detroit, Mich., Space 18, M. F.—Pungs-Finch cars.

Reid Mfg. Co., Detroit, Mich., Space 19, M. F.—Woolverine cars.

Rose Mfg. Co., Philadelphia, Pa., Space 16, G.—Lamps.

Reliance Motor Car Co., Detroit, Mich., Space 37, M. F.—Reliance cars.

Splitdorf, C. F., New York City, Space 1, G.—Splitdorf spark coils.

Standard Oil Co., Detroit, Mich., Spaces 2, 3, G.—Gasolene.

Schug Electric Co., Detroit, Mich., Space 13, G.—Ignition apparatus.

Stirling Automobile Co., Detroit, Mich., Space 21, M. F.—Agent for Pierce and Studebaker cars.

Schneider, J. P., Detroit, Mich., Spaces 12, 13, 14, M. F.—Agents for Peerless, Auto-car and Columbia cars.

Twentieth Century Mfg. Co., New York City, Space 20, G.—Lamps.

Thomas Motor Co., E. R., Buffalo, N. Y., Space 17, M. F.—Thomas cars.

Veeder Mfg. Co., Hartford, Conn., Space 10, G.—Veeder odometers, tachrometers, etc.

Warner Gear Co., Muncie, Ind., Space 23, G.—Gears.

White Sewing Machine Co., Cleveland, O., Spaces 42 to 45, M. F.—White steam cars.

Wayne Automobile Co., Detroit, Mich., Spaces 26 to 29, M. F.—Wayne cars.

Welch Motor Car Co., Detroit, Mich., Space 16, M. F.—Welch car.

Weber & Co., W. H., Detroit, Mich., Spaces 30 to 33, M. F.—Agent for Rambler and Mitchell cars.

Young & Miller, Detroit, Mich., Spaces 34, 36, M. F.—Agents for Elmore and Yale cars.

Fisk Opens Another Branch.

Kansas City, Mo., constitutes the eighteenth link in the Fisk Rubber Co.'s chain, its branch there having been just established. Like all the others, it will be complete in every detail.

"I don't think it is generally known or that I am wrong in claiming that these branches of ours are the most completely equipped establishments of the sort in the world," said J. W. Bowman, Eastern sales manager of the Fisk Rubber Co., in remarking the opening of the Kansas City place. "Of course, I'm interested, but I do think the fact should be cause for some pride on the part of Americans generally. Each and all of the Fisk branches not only carry a complete stock of Fisk tires, but are able to make any sort of a repair of any tire, of any make, that may be brought to them. The men in charge of the repair departments were all thoroughly schooled in our factory, and, if occasion required, are competent to build a tire from the ground up. Each place is equipped with a battery of vulcanizers and all other facilities to permit the handling of tires of all sizes, from those for the biggest automobiles to the ones for the smallest bicycles. In this way we have made it unnecessary for any one to ship tires a thousand miles or more for even the most intricate repair—and we don't charge anything extra for doing the work on the "other fellow's" tires, or for the saving of days of time and dollars of express charges made possible by the proximity and completeness of our branches," added Bowman with a smile.

Why Miller Was Ruffled.

Charles E. Miller—you all know him—has been very much ruffled this week. Although Miller has absolute control of the sale of Brampton chains in this country, some man, as yet unidentified, has been making the rounds of the trade endeavoring to do business as a representative direct from the Brampton factory.

When news of the imposition reached Miller, he immediately cabled to the Brampton people and received their assurances that they had no representative in this country, and recognized Miller only as their exclusive sales agent. The tradesmen who receive visits from other than a Miller man should, therefore, know how to "receive" him, and—likewise—to speed his parting.

Buggy Factory Will Build Automobiles.

The Detroit-Oxford Mfg. Co. is the style of Michigan's newest automobile manufacturing concern. It will be capitalized at $100,000 and be located at Oxford, where the Crawford buggy factory has been purchased and will be used for the production of the Detroit-Oxford cars. C. H. Crawford, the former head of the buggy works, is the president of the new concern. His associates are as follows: E. C. Lieprand, of Detroit, vice-president; E. L. Peterson, of Detroit, secretary, and J. G. Sutherland, of Oxford, treasurer. The above named officers, with W. A. Dumas and A. Radford, of Detroit, are the directors.

Densmore to Face Old Charge.

Park Densmore, formerly president of the extinct Foster Automobile Club, of Rochester, N. Y., is in jail at Pasadena, where he has been in the contracting business. His arrest is based on a charge of grand larceny, growing out of the failure of his automobile company some two years ago. Densmore is credited with saying that he will come East on his own account to fight the proceedings.

Boston Show Opening Advanced.

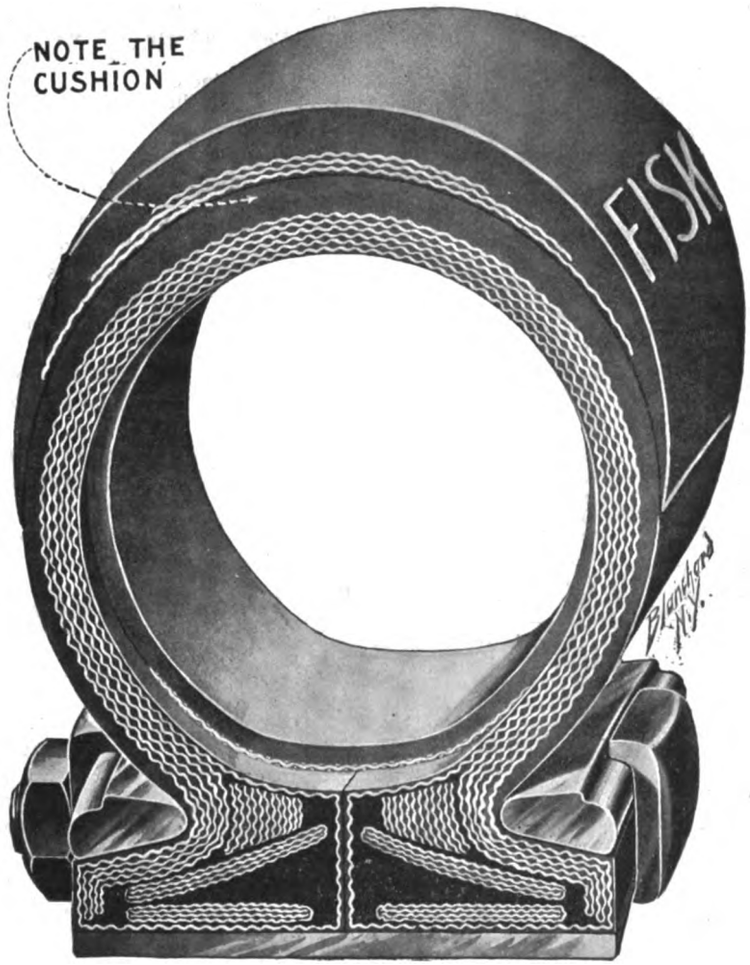
It has been decided to open the Boston Automobile Show on Saturday, March 11, in lieu of March 13.

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LIFE PRESERVER

is the term used by one of the many discriminating users of Fisk tires to characterize the

FISK MECHANICAL FASTENING.



And when you think of it, it is a very apt definition of it. You never hear of accidents due to Fisk tires "creeping" or rolling off, or blowing out of the rim. They simply can't do it. That fastening holds them as securely as a safety deposit vault holds its contents.

Got a copy of our booklet yet?

The Fisk Rubber Company, Chicopee Falls, Mass.

BRANCHES: New York, 754-756 Seventh Ave. Chicago, 1251 Michigan Ave.

BOSTON, 226 Columbus Ave.
SPRINGFIELD, 40 Dwight St.
NEW YORK, 754-756 Seventh Ave.
PHILADELPHIA, 828 Arch St.
ATLANTA, 103 N. Pryor St.
SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
MONTREAL, CANADA

DETROIT, 254 Jefferson Ave.
ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
MINNEAPOLIS, 704 Hennepin Ave.
DENVER, 1534 Glenarm St.
SAN FRANCISCO, 114 Second St.
LOS ANGELES, 1034 So. Main St.
LONDON, ENGLAND

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Buyers Are Wise Now.

Time was when the reputation of its builders sold the car, and this is true to an extent incredible to-day. Wealth was, of course, a prerequisite to the ownership of a car of any kind then, not alone from its first cost, but the expense of maintenance which frequently might exceed the latter in the course of a little over a year. Cars were ordered simply by name rather than the fact that they met any specific requirements which the buyer might have in mind, because the latter were non est—knowledge of anything but the name of the car was lacking, and as brought out in an interview with the representative of a prominent maker, it was nothing unusual for the purchaser to hand out his check when ordering a car without going through the preliminary of an inspection of any nature; others would casually take in the external fitness of the car and the color and upholstery were more weighty considerations with many of these than the character of the motive power or its efficiency.

This in reference to the question, "Is it easier to sell cars to-day than it was a few years ago?" Looked at from varying points of view, this may readily be answered both in the affirmative and negative. The latter because the purchaser now wants to know exactly what he is getting, and is not so readily influenced by the reputation of the manufacturer, the tables having been turned in this respect, in that the car must make its own name. He wants to know the why and wherefore of innumerable things regarding which he was in utter darkness formerly; the car must meet preconceived requirements differing with probably every third buyer, and the result of personal experience, and many considerations then not taken account of now sway his decision one way or the other.

The purchaser now talks carburretion, ignition and the advantages or otherwise of certain types of valves, frames, suspension and the hundred and one details that interest him as glibly and often to more purpose than the salesman, to whom he can give points. The mere fact that the car does not break down in the course of the demonstration is no longer sufficient; its action is closely watched; the operation of the motor and its accessory apparatus under the varying conditions of speed on the level and hill climbing, and particularly its capacity in the latter direction are important considerations. And frequently several demonstrations are necessary. Considered from this point of view, the question must be answered decidedly in the negative: it is not as easy to sell cars now, by any means.

But the converse of the proposition likewise holds good. Where formerly there was one prospective buyer, there are now hundreds, nay, thousands. That the prevailing dense ignorance as to everything concerning the car has given way to an enlightenment of the opposite extreme, militates in favor of the maker and his agent rather than against him, for the car bought merely on the latter's reputation frequently failed to substantiate the good service expected of it and ended by ruining its only recommendation in the eyes of its owner—that it was of a certain make. If his enthusiasm survived this trying test, he looked elsewhere for his next choice. Now the car is bought on its own reputation, supplemented by a personal knowledge of its many good points and cognizance of the value of improvements which the maker may be able to lay claim to as exclusive on his product.

Looked at in this light, it is easier to sell a car than ever before, because there are now thousands who recognize its advantages and know how to utilize them, and who will buy new cars of the same make season after season because of this knowledge. Then, despite the ever incerasing competition and tendency to settle on a firm economic basis brought about on lines similar to those necessary for any enduring business, there is the tremendous, almost daily, increase in the number of votaries of the automobile.

Sympathy for the Specialist.

Human nature proceeds on the assumption that a device which performs what is expected of it merits no praise—so long as it keeps up to the mark, but once let it fail or fall short of the mark, and nothing less than eternal damnation is bad enough for it. This is the inherent trait in man which the specialist, the manufacturer who devotes his entire time to producing a good carburetter, ignition apparatus or any one of the hundred and one odd essentials of a car which the builder seldom makes himself, has to contend with early and late. After evolving an invention of merit, reducing it to practical shape and placing it on the market in a form so simple as to be readily understood by the veriest tyro, then his worries commence and a detailed account of some of them would put fiction to the blush to an extent that appears incredible.

Take the carburetter as an instance. A prolific source of guesswork on the part of the uninitiated, even under favorable circumstances, when properly applied and given intelligent attention, it performs its duty or gives some inkling of the reason for its shortcoming to the practised eye. But in the hands of the hundreds who are only satisfied with a device that stands up under all conditions, its most violent symptoms of distress too often go all unheeded, and the manufacturer is informed in no uncertain terms of the worthlessness of his product. Investigation of complaints of this order usually results in showing them to be totally unfounded, and the so-called defect nothing more serious than some temporary derangement requiring but a moment to set right. Nor is the user the only transgressor in this respect, the builder of the car—not always quite as expert as he thinks him-

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self—may have applied it in the first instance in such a position as to nullify any beneficial effect a good carburetter might otherwise be able to exert, as where it has been placed several feet from the inlet valves, or not equidistant from the different cylinders and connected through tortuous pipe of a diameter far too small to give the proper result. This is but one type of complainer, and the instances cited are not supposititious, but such as freqeuntly occur in practice.

Then, there is the amateur or newly fledged professional who undertakes to set things up himself unaided, and when, as the result of his efforts, he finds it impossible to make his engine run, he damns the latter and the maker is made to realize that it is not a motor, but a piece of junk that he is selling. A sample of the latter species came to notice not long ago, where in connecting up the engine, a marine one in this case, the gasolene tank was piped to the water jacket and the water to the fuel supply. Such stupidity seems beyond the pale of reason, but such was the actual fact, and, after having toiled over it several days without any success, the purchaser finally gave up in despair and wrote the stereotyped letter to the maker—the engine was no good whatever; it was simply impossible to even make it turn over. Corespondence aggravates a case like this, so a factory representative was sent, and, needless to add, it did not take him long to locate and remedy the trouble. This is another type, and it is one that makes the manufacturer's life a burden to him at times. But these two do not sum up the total, for even the repair man, who should be his chief ally, is more often guilty of unwarranted pieces of stupidity and serves to add his quota.

A broken or chafed wire or oftimes a dead battery will bring disgrace to itself, the engine and car alike in the eyes of its owner, who cusses the whole outfit as no good, and an instance has occurred where solely through failure to operate from a dead battery a car has been returned by express more than a thousand miles, with a letter expressing in terms more forcible than elegant the opinion of the purchaser. Frequently for some apparently unaccountable cause the engine will run by fits and starts, and it must be admitted there are few things more exasperating, and, failing to remedy the difficulty by trying everything that occurs to him until absolutely disgusted, the maker gets the usual communication, often couched in terms more expressive than pleasant, telling him how little he knows about building automobiles.

But on the other hand, the manufacturer has in the past been so frequently to blame himself that neither he nor his customer can afford to indulge in any superfluous stone throwing—it is, in short, a matter for considerable give-and-take on both sides. Through his ignorance or stupidity the buyer of a car does not see unavoidable temporary derangements which in some instances would bite him if animate, but, on the other hand, cars have sometimes been sent from the factory in this condition, and the maker must in such a case accept the responsibility. Likewise should he confess himself to blame for poorly designed springs on automatic valves, a poorly placed carburetter—or a great many of the odd defects that go so far toward disgusting a car owner.

Truly the specialist is a man who gets more kicks than ha'pence, and of all those in the trade deserving of sympathy his should be the major share.

Not Due to American Air.

"Does American air cool better than European air?" is the ingenious question put forward by a foreign observer who has noted the success and steady increase of air-cooling in this country, in contrast with the lack of experiment in this direction abroad. According to this observer, some of the methods resorted to here to render air cooling effective are so elaborate and expensive as to render it questionable whether a water circulating system would not only be simpler, but cheaper. This, however, is an opinion based more upon superficial observation of illustrations of new systems for this purpose than of the cars themselves or their performance in actual service.

The results thus far achieved with air-cooling here are due in large measure to the initiative of the American builder, and the fact that he is not bound by French standards, while the small amount of attention given the subject abroad is owing in great part to lack of the former quality, or extreme conservatism, backed by adherence to "across-the-channel" ideas, where the Englishman is concerned, and almost entirely to the latter, where the remainder of the Continent is considered. And to the American designer and builder is due so much greater a measure of credit for having successfully defied precedent to the extent of radically departing from standards acknowledged by the rest of the automobile world.

As to the question which gives rise to the discussion, that may at once be answered in the affirmative, with the reservation that while American air undoubtedly cools better than the atmosphere of over-seas, it is not due to any inherent quality of the latter itself, but to the manner in which its properties are taken advantage of. American air certainly has greater cooling power when applied to an American air-cooled engine than the English atmosphere has for an engine native to its soil, but the latter would not do any better here than at home, while the American engine will run cool in any air, as has been successfully demonstrated by the use of air-cooled cars in the tropics.

There is no one feature of the successful air-cooled car as turned out in this country on which the American designer can claim to base his achievements. The latter are the result of long study of the subject and a realization of the fact that the air-cooled motor is in a class by itself. So far as the interior of the cylinder is concerned, the advantages and limitations of the water-cooled type apply to it in equal measure, but apart from this it is a totally different proposition, and a reference to the detailed report and illustrations of the various air-cooling systems now on the market contained in the show number of the Motor World will readily show that departures in the design of cylinder heads, intake and exhaust valves have been found necessary, and that all have combined to form an engine that will operate satisfactorily under atmospheric conditions to be found in any part of the globe.

To Win by Hook or Crook.

The Bennett Cup situation is a notable illustration of what comes of the effort to mix sport and commercialism. The Grand Prix, which the Frenchmen would run in conjunction with the cup race, is inspired by the most commercial motives—the desire that there shall be a preponderance of French entries, and that therefore it may be possible, should France lose the Bennett Cup, for the Frenchmen to advertise, 'We may have lost the Bennett Cup, but a French car beat the winner of it.' It is a contemptible attempt to sacrifice sport for commercial prestige, and well merits the snub administered by the Germans, who have curtly intimated that if France maintains its unsportsmanlike stand there will be no German cars in either race. It were well did America take the same position.

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FROST IN CUBA

"International Meet" Proves Farcical, a Native's Victory Redeeming it from Abject Failure.

Except to gratify the aims of a so-called sportsman, who made a mark as a six-day professional bicyclist and other things, and doubtless to add to his exchequer, there was at no time sound reason for either the so-called "International Automobile Racing Association of Cuba," or its so-called first annual "international race meet," which "held the roads" last week. It was doomed to failure from its inception, and if, by a lucky turn of fortune in the form of mishaps to others, a Cuban had not won the principal race of the so-called meet, it is probable that the Cuban gentlemen who permitted themselves to be inveigled into the "International Association" would be quick to see beneath the gilding of the brick which was handed out to them, and even beneath the heralded "mile record" in 46 seconds—that is, a "record" made on a macadam surface instead of one of sand.

As a matter of fact, and as the Motor World of last week intimated plainly was likely to be the case, the race meet or carnival was beautifully embroidered with "frost" from beginning to end. The "boatloads of rich Americans" were conspicuous by their non-arrival, and "all of the fast American cars" were as lacking. The races and the so-called "battle of the roses" were small affairs.

The interest of the Cubans themselves was not even lukewarm, and the contests were largely farcical. The fact, as stated, that a Cuban managed to win the 160 kilometer race was the saving clause. It gave a chance for the Cubans' patriotism to come to the surface, and gave them cause to believe that they really had got something for nothing, despite a generous deficit which some one must make good.

The 106 kilometer race over the San Cristobal road Sunday, February 12, was the principal event, and it was won by Ernesto Carricaburn, a Cuban, in a 60 h. p. Mercedes, who beat Joseph Tracy, in a 30 h. p. Renault, by 0:1:32 2-5. Carricaburn's time over the course was 1:50:53 3-5, and his average per hour 53 7-10 miles. The eastward run to San Cristobal was 79¼ kilometers, and the return 80¾ kilometers, the 160 kilometers falling short of 100 miles by about two-thirds of a mile. Joseph Tracy, driving a 30 h. p. Renault, started first; then H. W. Fletcher, in a 90 h. p. De Dietrich; then Joseph Birk, in a 40 h. p. Mercedes; Ernesto Carricaburn, in a 60 h. p. Mercedes, and H. A. Robinson, driving a 40 h. p. De Dietrich. The starts were made at intervals of ten minutes, and finished at the San Cristobal control in the same order. Tracy made the distance in 0:51:22 3-5, Robinson in 1:17:01 4-5, and the others were scattered between. For the return trip the starts were made in the same order, except that the cars were startd at intervals of two minutes.

Tracy covered the last half in 1 hour 1 minute and 3 2-5 seconds. At first it was believed that he had won, but Carricaburn, who started half an hour later than Tracy, covered the course in a little over a minute and a half faster. Tracy led at San Cristobal by about three minutes, but a broken pipe and a fallen battery robbed him of the victory.

After starting, Fletcher punctured a tire and had other drawbacks, necessitating stops for water and repairs. The 30 horsepower Renault, driven by Tracy, was the lightest car in the race. In addition, its battery was loosened and gave trouble toward the end of the contest.

Carricaburn rode like a madman, waving his hand to the crowds along the course while he was speeding at a rate of eighty miles an hour, and taking the turns with reckless daring. It was his first race.

E. R. Thomas and Edward Hawley were injured Friday preceding the race, as the result of a collision between Thomas's 90 horsepower Mercedes and an ox cart on the road between Punta Brave and Guanajay. The accident kept them both out of the race.

Tuesday's races were attended by scarcely a hundred spectators, as the events took place on the stretch of road between Guanajay and Artemis, fully thirty miles distant from Havana. The only means of transportation from the city was either by stage coaches or automobiles, and but few of the latter were available. The first event was a one-mile speed trial. H. W. Fletcher, driving a 90 horsepower De Dietrich, made the mile in 0:46 4-5, and Joseph Tracy, driving a 30 horsepower Renault, drove over the course in 0:52.

The one-mile kilometer race was run by Fletcher alone, as Tracy broke a gear while making a flying start. The time for the kilometer was 0:28 3-5.

As night was approaching, rain began to fall, and the few spectators were leaving in disgust, the five, ten and twenty kilometer events were run as a single event, the only contestants being Fletcher and R. G. Mendoz, the latter driving a 35 horsepower De Dietrich. Fletcher covered five kilometers in 3 minutes 4 1-5 seconds, ten kilometers in 5 minutes 57 seconds and twenty kilometers in 11 minutes 18 1-5 seconds. Mendoza took 21 minutes 13 seconds for the twenty kilometers. The summaries for the events follow:

SUNDAY.

160 Kilometer Race for Municipal Cup of Havana.

Ernesto Carricaburn, 60 h. p. Mercedes	1
Joseph Tracy, 30 h. p. Renault	2
Joseph Birk, 40 h. p. Mercedes	3
H. A. Robinson, 40 h. p. De Dietrich	4
H. W. Fletcher, 90 h. p. De Dietrich	0

Times—Carricaburn, 1:50:53 3-5; Tracy, 1:52:26; Birk, 2:34:28; Robinson, 2:40:17.

TUESDAY.

One Mile.

H. W. Fletcher, 90 h. p. De Dietrich	1
Joseph Tracy, 30 h. p. Renault	2

Times—Fletcher, 0:46 4-5; Tracy, 0:52.

One Kilometer, Open.

H. W. Fletcher, 90 h. p. De Dietrich	1
Joseph Tracy, 30 h. p. Renault	0

Time—Fletcher, 0:28 3-5. Tracy broke gear at start.

20 Kilometer, Open.

H. W. Fletcher, 90 h. p. De Dietrich	1
R. G. Mendoza, 35 h. p. De Dietrich	2

Times—Fletcher: 5 kilometers, 3:04 1-5; 10 kilometers, 5:57; 20 kilometers, 11:18 1-5. Mendoza's time for 20 kilometers was 21:13.

CHICAGO IS PROUD

Miles's Show "Knocked New York Silly," of Course!—Figures "Prove" and Disprove it.

Although the Chicago show is supposed to be a national exhibit, it is really Sam A. Miles's show. He is bound not to charge more than 75 cents per square foot for space, and pays all expenses, applying the initial receipts to these expenses, and then from the net proceeds deducts $6,000 in a lump sum, and with it tucks an added 33 1-3 per cent of the remainder into his personal pocket.

Miles is a former resident of Chicago, and, on occasion, still poses as one. He had a considerable following out there, and this, coupled with Chicago's pride, makes it possible for those "in the know" to readily comprehend the fulsome stories that follow each succeeding show in the Western metropolis.

This fulsomeness was not lacking in the case of the show which closed on Saturday night last. If one-half of what was said and printed in Chicago were true, Miles's show made the prodigious affair in New York look almost like the proverbial "thirty cents," and Miles must have had to enlarge his pocket for his 33 1-3 per cent. According to what are described as the official figures, 122,421 persons attended the show during the seven days which, according to Chicago's fulsomeness, is something like 25 per cent more than the total attendance at the New York exhibit.

It is not stated who made the official count or what process of multiplication was employed in reaching the result. There is no doubt, however, that the attendance this year was much greater than at any previous show, but that it approached the proportions of the New York function is incredible. The evening crowds at Chicago did not seem to be even so large as the morning crowds in New York.

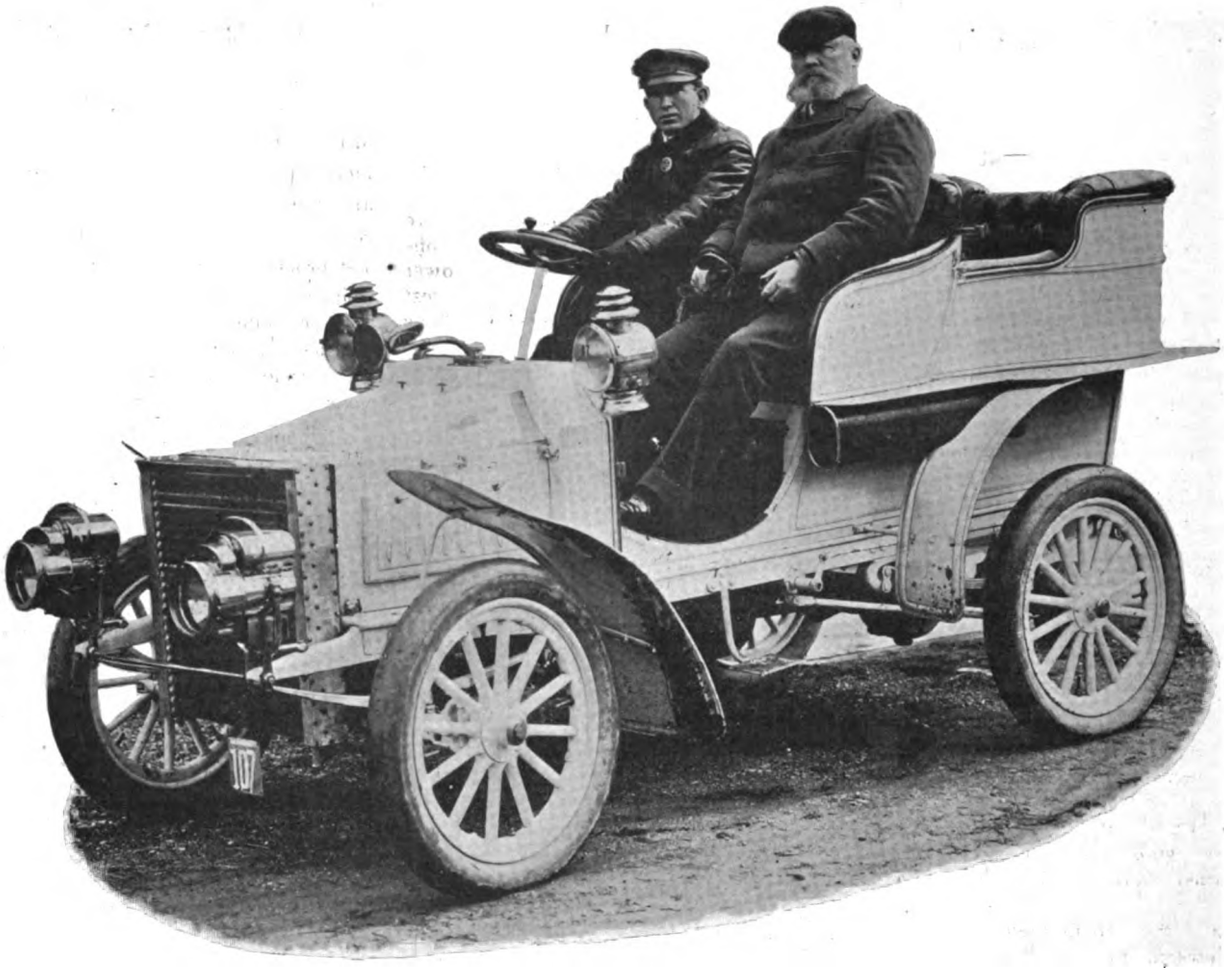
The Chicago public responded liberally, and the trade of the surrounding towns was also well represented. There were a few scattered dealers present from as far West as Omaha, Neb., and Minneapolis and St. Paul, Minn.; but, generally speaking, the show did not reach above the dignity of a neighborhood event, notwithstanding any statements to the contrary that may be inspired by local or sectional pride. How far apart are the Eastern and Western shows is well illustrated by the number of trade tickets supplied by the Motor and Accessory Manufacturers to their members. At New York this organization purchased and made use of twelve thousand of these trade tickets; at Chicago the total number of the same pasteboards sold by the organizations' representative on the ground, up to the afternoon of the closing day, was exactly 372.

There was business done, of course; but, generally speaking, not a very great deal of it. Few of the manufacturers whose cars were in evidence did more than "drop in" or spend more than a day or two at the show, when, indeed, they attended at all.

At Chicago the number of would-be dealers from little specks on the map of the West were remarked. Nearly all of these men had the sale of one car in sight; but, as one of the exhibitors told a Motor World man, they "almost fell in a fit" when they discovered that an order for five or ten cars was necessary to obtain an agency.

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The New Head of the A. A. A.



ELLIOT C. LEE, THE NEW PRESIDENT OF THE A. A. A., IN HIS WHITE STEAMER.

Col. Pope Also Protests.

Colonel Albert A. Pope wishes to go on record as protesting against allowing French commercialism to dominate the Bennett Cup race, and is supporting the Automobile Club of America in its protest that the big road race proposed should not be permitted on the same day as the international event. He expresses himself in the following communication to the A. C. A., which is indicative of his feelings in the matter:

"Permit me to thoroughly commend the course taken by the Automobile Club of America in protesting against the plan of having the Grand Prix run over the same course and on the same day as the international cup race.

"When I entered our Pope-Toledo racer for this event it was done with the definite understanding that we were in possession of the rules and regulations governing entries and contestants for that race. I should, therefore, deem it eminently unfair to find our car racing under other conditions than those stipulated. I feel strongly about this matter, but am sure that such action as has been taken by the Automobile Club of America and other clubs in Europe will have the desired result."

Whipple Wants His Money Back.

Harlan W. Whipple, former president of the A. A. A., is making a determined effort to obtain the $5,000 in cash put up with the authorities of West Orange. This sum served the purpose of indemnifying the town from any damage that might result from the Eagle Rock hill climbing contest of last Thanksgiving Day.

The town officials announce their intention of keeping the money for five years in case any suits should come up in that time, but Whipple will apply to the courts in order to have the money refunded, as there were no accidents at the climb that could possibly involve the town.

Chicago Thieves are Indicted.

Indictments have been returned against William Knight and M. B. Neele, of Chicago, on charges of having received stolen property. It is alleged that they purchased automobiles which had been stolen from Sidney F. Gorham, secretary of the Chicago Automobile Club; Jacob Rosenstyn and C. E. Plamondon. Gorham's car was valued at $750, Rosenstyn's at $400 and Plamondon's at $1,000.

Sporting Life in Philadelphia!

Philadelphia had a sensation last Saturday afternoon—an automobile hill-climbing contest extraordinary, and on the toughness of the crank shaft depended whether Nat Folwell, a former "Pennsy" football player, would pay double price for a car or get one for nothing.

Carl W. Kelsey, who owns a 16 horsepower Maxwell car, was explaining its virtues to Folwell, who wagered the machine could not climb the granite steps of the Mercantile Club, on Broad street, and Kelsey promptly took him up. The Mercantile Club steps consist of seventeen nice little granite blocks, each sixteen inches wide and seven high. The Maxwell car climbed the steps three times without using a non-slip device on the rear tires, and Folwell was satisfied.

Col. Green's Race is Off.

The fifty-mile automobile race between Colonel E. H. R. Green's Pope-Toledo and Howard Hughes' Peerless cars, which was scheduled for last Saturday at the State Fair Ground track, Dallas, Texas, has been indefinitely postponed. The sudden climatic changes have made the Dallas track unfit for racing.

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AUTOBUS LINE FOR MONACO

Gambling Pays for Modern Transport and Ancient Coaches Had to Go.

From the old stage coach to the modern automobile is the progress made in a very few years on the coast of the Mediterranean as a means of communication between Nice and Monte Carlo. It is interesting to take cognizance of the changes which conveyances have undergone in the past thirty years between these two points.

When gambling was first started in the old town of Monaco, the only means of transit from Nice was a rickety old steamboat, which usually took more than four hours, or, by coaches, equally antique, making periodical trips; but on account of the steep climbs, these vehicles did not make much better time for the short distance of twelve miles than the boats. Nice had long been a town of importance, and being in France, where gambling was prohibited, the natives were forced to undertake the tiresome journey when they wished to indulge in this questionable vice or go to Mentone. The railway went as far as Nice, but there came to a full stop, so all visitors had at some time or other to put up with the boat or coach journey, which was so inconvenient that many of them did not attempt to go to Monaco, and the gambling resort suffered in consequence. It was then finally decided that a railway should be constructed between Nice and the Italian frontier.

This project meant the overcoming of great difficulties, as so many tunnels had to be bored to make the line at all direct, and on account of the mountains further inland there was no alternative. Engineers took the matter in hand and constructed a line which went as far as Ventimigilia, and no less than thirteen tunnels were bored in the twelve miles from Nice to the gambling casino, which had been transferred to Monte Carlo. Visitors were then able to reach the Casino in forty-five minutes. This was a decided improvement, but the idea of so much beautiful scenery being hidden from view more than half the time, the soot and smoke caused by the numerous tunnels, besides the extremely foul air, made aesthetic vistiors prefer to take cabs, which cost about ten times as much as the train.

A line of modern coaches was then organized for those who preferred the old mode of transit, which appealed to them as being more healthy; an important factor, considering many of them were in the South for the purpose of recuperating their health. This line of vehicles was so successful that it has recently been decided to replace them by automobiles in order to cater to those in haste and those of taste. This public automobile service will be run between Nice and Mentone, and will cover the distance in about the same time as the local steam trains, but without the same discomfort. The automobiles are Serpollet steam cars, and they will be run with sufficient frequency to make it convenient and also of great pleasure to all visitors.

Oil Cooling.

The use of oil as a cooling medium for petrol motors instead of water has not a few advocates in countries where the cold is so excessive that there is much difficulty in preventing water from freezing, and thus bursting the pipes, etc., says The Car. Votaries of the oil method point out that this fluid will not freeze at 18 degrees below zero, and, even if it does freeze at a lower temperature, it forms a jelly which has not the expansive and destructive power of frozen water. As to the temperature to which the oil rises when the engine is working, one user states that the highest point ever reached on his car was 209 degrees Fahrenheit. The danger of the oil catching fire is prevented by covering with asbestos the silencer and any heated pipes on which oil from the cylinder is likely to drop. A good pump is said to be an absolute necessity with oil circulation, as otherwise the oil easily boils, and the engine is no longer well cooled. It is at such a time that the risk of the oil taking fire is greatest. In America the new method is being tested by several experimenters, and some of them claim considerable success.

Verily is it needful to go abroad to learn what is being done at home. The fact that oil is being experimented with in this country for cooling purposes will probably come as a piece of news to the supposed experimenters themselves.

Another "Long Felt Want" Filled.

According to an English contemporary, something has been lacking all along to make the motor car really popular and the "ha'-penny newspaper," the Britisners's name for the yellow journal, has recently exploited the dream of a "talented inventor's" cranium, which, like our own Sunday newspaper inventions, is destined to "revolutionize" the industry. This is a "detachable engine that can be taken into the house and attached to the sewing machine, the soul stirring mangle, the enlivening knife cleaning machine, or to some mechanism that will clean all the boots before breakfast, first calling up the hired help—and all that at about a quarter of the price at present demanded by the capitalistic plutocrats who are now living luxuriously out of the huge profits of the motor industry." One thing the dreamer of that portion of the press seems to have overlooked stating, and that was that the new invention filled "a long felt want."

This Berry is of the Right Sort.

T. C. Berry, of San Rafael, Cal., has taken steps to test the anti-automobile ordinance now existing in the county, which prohibits the use of automobiles on the roads after dark, on the grounds that it is unconstitutional. Berry was arrested last August for offending the law in this respect. He was convicted in the lower court, and has appealed to the Supreme Court.

Club News the Country Over.

The following officers have been elected by the Pasadena (Cal.) Automobile Club: President, Tracey N. Drake; vice-president, Louis S. Lafiin; treasurer, Dr. Thaddeus Updegraff; secretary, B. O. Bruce.

The New Hampshire Automobile Club is planning the construction of a well equipped clubhouse at Hampton Beach. Last summer the club rented the new Boar's Head Hotel at that resort, and used it as a clubhouse and garage.

These officers have been chosen by the Colorado Automobile Club of Denver: President, Dr. F. L. Bartlett; vice-president, Brayan Haywood; secretary, W. H. Bergtold; treasurer, Louis Searing; executive committee, E. P. Hershey, B. V. Brown and J. W. O'Connor.

Courtland F. Bishop, the new vice-president of the Berkshire Automobile Club, Pittsfield, Mass., has offered a silver trophy for competitors in the club's hill climbing contests next spring. Bishop suggests that the matches take place on Florida Mountain, in North Adams.

The Philadelphia Automobile Club is finally moving in the effort to have the Pennsylvania law so amended that the license tag and number of an automobile from any other State shall be accepted in Pennsylvania. As it is now, automobilists from other States must secure Pennsylvania licenses and numbers before using a car there.

The Colorado Automobile Club, of Denver, has decided to establish a school of instruction for its members. Lectures and practical demonstrations will comprise the curriculum. Dr. F. L. Bartlett, president of the club, will deliver the first lecture in the course. His subject will be, "The Use of Agents Other Than Gasolene for Automobiles."

The decorations at the first annual ball of the Rockford Automobile Club, Rockford, Ill., held last Wednesday evening, were rather unique. Automobile tires were arranged in festoons, and posters, covers from automobile publications, and a generous assortment of horns, spark plugs, lamps, pumps, license tags, and other accessions adorned the walls. The orchestra played in three touring cars in the centre of the hall.

Didn't Juggle but Got Damaged.

Failure to juggle an automobile in a Chicago theatre, which, according to the terms of his contract, he had promised to do, led to a dispute about salary between Paul Spadoni, a juggler, and Manager W. S. Cleveland, which finally terminated in court. Despite the theatrical man's testimony, the jury returned a verdict of $225 in favor of the man who failed to do the automobile trick.

Not How Cheap, How Good?

The Postmaster General of England has advertised for bids for an automobile mail service between London and Brighton. Not the lowest bidder, necessarily, will be given the award for such service, but what the committee considers the best.

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M. & W.'S NEWEST TIRE

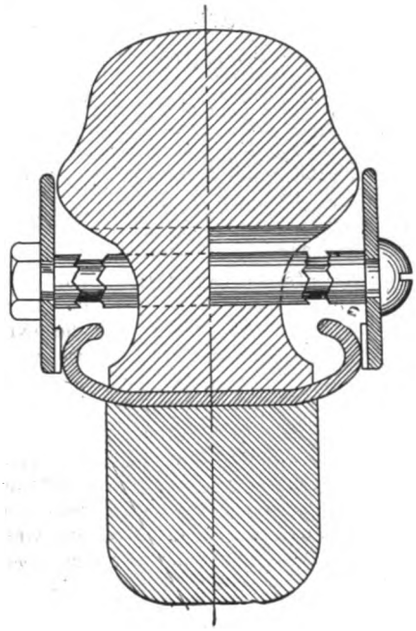
It's an Improved Solid-Cushion Taking Advantage of Pneumatic Principles.

To meet the widespread demand manifest in the past few years for something affording a higher degree of comfort than the average solid tire, but without liability to puncture, Morgan & Wright have, after exhaustive experiments and tests, recently placed on the market what they term an "improved cushion automobile tire."

The peculiar cross section of this new tire, as well as the method of fastening, both of which may be noted by reference to the accompanying illustrations, are the result of long study of the scientific principles involved. The area of the load-bearing surface of any tire is but an extremely small fraction of the total circumference of the wheel at any time, and in the case of the ordinary solid rubber tire of semi-elliptic section, rigidly attached to the rim, this is scarcely more than a point. In consequence of this, as well as the method of fastening the only possible offset to the jolts caused by meeting obstructions, is the compressibility of the material itself, which is reduced to reduced to a minimum by its cross section, bringing the greatest amount of rubber at the base. Thus the amount of resiliency obtainable by this method is not only minimized by the design of the tire itself, but also by limiting the compression area, transmitting all but the small amount of shock absorbed by the rubber at that particular point directly to the rim.

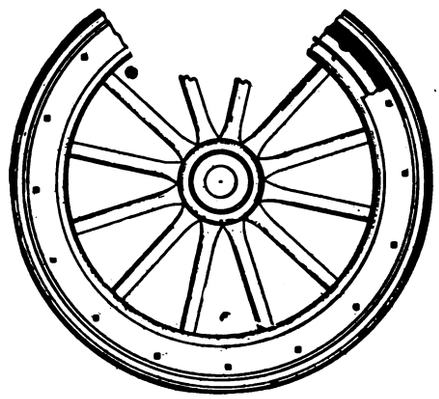
The pneumatic tire is not open to this objection, owing to its continuous air cushion circumference, thus supporting the load on a very much larger fraction of the latter, and always tending to keep the wheel itself in equilibrium.

In the improved cushion automobile tire this principle has been taken advantage of as far as possible by greatly reducing the cross section just above the base, thus allowing the whole tire to compress, also by the method of attachment which permits of a very much larger portion of the circumference being utilized to support the load at once. As will be seen, the tire is much narrower at its centre than at either the base or tread, and is adapted to the ordinary clincher rim. It is held in place by annular discs, or flanges, bound together at frequent intervals by bolts. These bolts pass through slots in the tire, which in width substantially correspond to them, but are elongated to about double their diameter in depth. Surrounding each bolt on the inside of the flange is a loose sleeve or tube for the double purpose of preventing wear and maintaining the proper distance between the flanges. As it is only by the inter-relation of the latter and the tire that this is held on the rim, neither is rigidly fastened to the latter, thus allowing a large fraction of the tire to compress at a time, unhampered either by fastening to the rim or the flanges which move with it. This feature, in conjunction with the greatly increased compression obtained



CROSS SECTION TIRE, SHOWING METHOD OF APPLYING.

by recessing the tire itself at its central cross section, should result in obtaining the great amount of resiliency claimed and which has



AS APPLIED TO THE WHEEL.

been borne out by long tests. The makers will be pleased to furnish further information on application.

Darwin's Evolution of the Auto.

Not Darwin's idea of the evolution of man, but Darwin's theory of the evolution of the automobile is expected to be made known in Aurora, Ill., when Dr. Delos Culver Darwin springs his new car on the unsuspecting public in April. Dr. Darwin is having what he considers a practical doctor's runabout constructed. It will be a low powered gasolene car, with closed top and solid rubber tires.

Lamb to Build its Fold.

The Lamb Automobile Co., incorporated last week at Clinton, Iowa, is showing a spirit of progressiveness. Ground was broken this week for the erection of the new garage, where the Lamb Co. will also conduct an automobile livery. The specifications call for for a building 80 feet deep, 40 feet wide, one story high, with walls of brick veneer and front Ashlar granite blocks.

COULDN'T GET TOGETHER

West Enders Still Obstinate—N. A. A. M. and Allies to Swamp Saxe Bill.

Nothing having resulted from the friendly overtures of the Committee on Legislation of the N. A. A. M. to a like select few of the exalted West Enders, with a view to bringing the latter to a reasonable state of mind in regard to the obnoxious Saxe bill, no further steps in this direction will be taken, but all efforts will be centred on killing the bill when it comes before the Assembly and Senate by an overwhelming mass of protestants. Through the efforts of the committee of the N. A. A. M. and their counsel, Charles Thaddeus Terry, the bill, which had already been favorably reported to the Senate by its committee, was referred back to them and a hearing set for the 28th inst., which should certainly mark a gala day in the annals of automobile legislation, as it is the intention of the New York State Automobile Association to have delegations from all parts of the State present, while the A. A. A. and the N. A. A. M. will be represented by as great a force as possible. If mere numbers count for anything, the Saxe bill and its sponsors from the frigid zone of Manhattan Island will be lost in the drifts, but it is not alone numerically, but in influential strength, that the various delegations should be able to bring the greatest power to bear, as representative men from all over the State are expected to voice their sentiments and use their influence in killing this iniquitous piece of stupidity. In order to render this plan of campaign more effective, the bill will be reported to the Assembly and Senate on the same day, this having been brought about through the efforts of Mr. Terry.

In an interview the latter informed a Motor World man that the license test matter, which, as recently outlined in these columns, was soon to be taken up and litigated, had of necessity been sidetracked for the time being owing to the amount of attention centred on the Saxe bill, as well as the fact that the Chicago show intervened and many of the principals were out of the city. Contrary to the statement previously published that this test would be brought in the Federal Courts, it is now learned that as yet no definite plan of action has been decided on to cover this particular, except that, regardless of whether the action is first instituted in a State or Federal Court, it will be carried to the United States Supreme Court in due course in order to make its application to the country at large uniform.

Motorist Sues Trolley Company.

Edward C. Schwab, of the firm of R. J. Schwab & Sons Co., Milwaukee, Wis., has brought suit against a street railway company of that city for $4,000 damages. Schwab was backing his machine across the tracks when the trolley car collided with and damaged it.

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STILL THEY COME

Solons from Maine to California Get Busy—Some of the Results.

Following the example of other States, South Carolina has come into line with an automobile bill, and Assemblyman Morgan, of Greenville, is its sponsor. The bill, as passed by the House, specifies that no motor vehicle of any description can be run on the highways at a greater rate of speed than fifteen miles an hour, but this rate applies only to country roads. When approaching a crossing or bridge the speed must be reduced to six miles an hour. On approaching a pedestrian or horse drawn vehicle warning must be given by sounding the bell or horn, and if the horse shows any tendency to become frightened the car must come to a full stop if asked to by the occupant of the vehicle. Lamps must be carried at night and on foggy days.

One pleasing feature of the bill is that a car need not be registered before it can enjoy the privileges of South Carolina's roads. Section 7 relates to penalties and is as follows:

"Whoever shall violate the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction be fined not less than $10 nor more than $100, and in addition thereto shall be liable in a civil action to any person injured in his person or damaged as to his property by the violation of the provisions of this act, and a lien shall attach to the vehicle causing the injury or damage in favor of the person injured or damaged, upon the filing of a suit for damages, whether such vehicle belongs to the person operating it or not, and said lien shall be a prior and first lien thereon, outranking any and all liens save of the same kind as this."

Two additional automobile bills have been added to the already large number now pending before the Wisconsin Legislature.

Senator Stondall has introduced a bill which he believes to be the necessary restriction of motor vehicles, without any of the provisions that are so objectionable to reputable and careful drivers of cars. The Stondall measure fixes the speed limit at twenty-five miles an hour on country roads and eight miles an hour within city limits; also requiring the driver of any car to slow up, stop or otherwise manage his machine so as to assist the drivers of frightened or skittish horses. A penalty of from $10 to $25 fine is provided for violation of any of these requirements. The bill also requires automobiles to display bright lights at night, under the penalty of a fine of $50 to $100.

Although the Stondall bill does not provide for numbering cars, Senator Wylie is the sponsor of a measure in which this provision is not overlooked. Each car must display a legible number, which can be secured from the Secretary of State. In this bill speed is indiscriminately limited to fifteen miles an hour, whether in country or city. The violation of either of these provisions is made punishable by a fine of from $10 to $100, according to the magnitude of results occasioned by an infraction of the law.

Pittsburg Councilmen saw a pretty little ascension in the Council chambers of that city last Wednesday, and the particular item to make the ascent was an automobile ordinance. Advices from Pittsburg state that it was "knocked sky high."

Peter Hermes, who claims to be the owner of more cows than any other man in the Sixth Ward, circumvented City Treasurer Steel's automobile ordinance in a way calculated to open the eyes of that official. The City Treasurer, "with an eye single to the interests of the city," had inspired an ordinance regulating the licensing of automobiles and regulating the maximum speed at which they may be driven through the city streets at fifteen miles an hour. The City Treasurer is a horseman, and owns no automobiles. Besides owning cows Councilman Hermes, however, owns several automobiles. Consequently, when he woke up and found that the ordinance had been passed by a vote of 14 to 12, he became very active and asked for an immediate reconsideration of the measure. A little lobbying produced the desired result, and the ordinance was smashed to smithereens by a vote of 14 to 12.

Country members of the Illinois Legislature have a few irons in the fire for automobilists of that State. Senator Berry, of Carthage, has introduced a bill requiring automobiles to come to a full stop before meeting or passing any other vehicles. A strict interpretation of the Berry bill would mean that if one chauffeur desires to speak to another he must stop his car 300 feet away and carefully approach his friend on foot. So far as is known, there is but one member of the Illinois Legislature who owns an automobile, Henry W. Austin, of Oak Park. It was stated that the fact that he possessed one cost him the chairmanship of the House Committee on Good Roads, for when the country members learned of it they effectually protested against his appointment.

Although the Berry bill does not make any provision as to speed, it is expected that before the session adjourns a deluge of automobile bills will be introduced.

Although the Mayor and Council of Glen Echo, Md.—of course, you all know just where that is—have passed an ordinance limiting the speed of automobiles, motor bicycles and all other conveyances not propelled by horses, mules or oxen, to six miles an hour within the corporate limits of that town, automobilists need not be alarmed, as the entire length of the village does not exceed half a mile. The Conduit Road, the favorite route for tourists to Cabin John Bridge from Washington, passes through Glen Echo. As the road is one of the best in the country, and is particularly alluring to speeding automobilists, they usually "let 'er out another notch" when going over it. However, the town authorities will have two constables mounted on bicycles with speed indicators to try to chase down automobilists who go fast, and, incidentally, fine them $5 if caught.

A monster petition is being circulated in all the wards of Los Angeles, Cal., for signatures to be presented to the City Counsel asking for the regulation of the speed of automobiles on the city streets. The attention of the Council is called to the fact that an ordinance allowing a reasonable rate of speed is altogether too indefinite to be of any use whatever, and a request is made that an ordinance be passed limiting the speed of automobiles and motorcycles to eight miles an hour within the territory mentioned.

The petitioners represent that they are all property holders and taxpayers of the city, and therefore are entitled to some consideration. A recommendation is made that the Council provide a fine of from $100 to $300 for violators of the proposed ordinance.

The House Committee on Ways and Means of the New Hampshire Legislature has finished its labors in the matter of a bill regulating automobiles in thta State, and will report a new draft. But the committee has failed signally in its attempt to prepare a favorable measure, inasmuch that it gives the local authorities privilege to make further regulations in this regard to certain streets or to exclude automobiles entirely from certain streets not a part of through highways.

The maximum speed limit has been placed at twenty miles an hour outside of village limits, and eight miles an hour within the city or village. Each car is required to be registered, one registration being sufficient, as long as the car remains the property of the same owner. The operator is required to pay a license annually.

With the signatures of over three hundred farmers gracing it, a petition for a law restraining the speed of automobiles in North Dakota has been presented to the legislature of that State, now in session. The few automobilists in North Dakota have no cause for complaint, however, as the farmers want the maximum speed on country roads fixed at twenty-five miles an hour, and ten miles an hour in cities.

This year, for the first time, automobiles are to be taxed as personal property in Milwaukee, Wis. They are mentioned on the official tax rolls, and an income of several thousand dollars for the city treasury will be the result.

The Detroit (Mich.) City Council has passed an ordinance restricting the speed of automobiles on streets traversed by streetcars to eight miles an hour.

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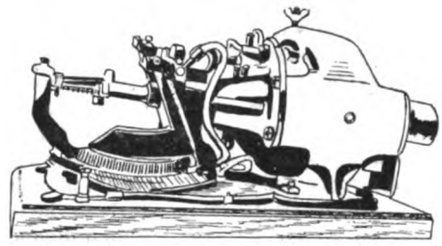
ELECTRIC HEADLIGHTS

Why They are Not More Generally Used—Efforts Making for their Increase.

Attempts galore have been made to utilize electricity for operating the now large and elaborate searchlights used on cars, but thus far acetylene is practically without a rival for this purpose. One of the principal reasons for the failure of electric current to score in this field has been the absurdly diminutive proportions of the generator usually employed—in fact, the utter inadequacy of the entire outfit put forward by some makers to perform a task far beyond its capacity. Acetylene doubtless has its drawbacks in the form of clogged pipes and other minor accidents that readily serve to disable it, so that the small generator in connectiton with a set of accumulators would apparently prove a natural solution of the difficulty. And it will, if properly installed, but this means a very much larger generator, a good governor and gearing to the motor. This represents not alone considerable more expense that has ever been lavished on anything of the kind here, but likewise greatly increased weight, added complication in its application and the absorption of one or more horsepower—insignificant in the case of the high powered car, but not so with the smaller, particularly where trouble is experienced in hill climbing. The ever varying speed of the engine is a constant source of trouble, as in the absence of an automatic cut out, the battery may overpower the generator at a very low speed, reversing its polarity and quickly discharging through it.

A system is now about to be placed on the market in England in which the centrifugal governor employed will actuate the arm of a rheostat as the speed varies, thus providing an automatically fluctuating resistance in place of the usual speed control. The dynamo of this system, as illustrated in The Car, a line reproduction of which is shown here, is apparently of sufficiently generous proportions, and with such a machine but a comparatively small set of accumulators in parallel with the generator would be necessary. By this means the latter would always be fully charged, and would only be called upon when the dynamo was stopped. The headlight employed consists of the usual parabolic reflector, with a 10 volt 10 candle power lamp, which also may be utilized as a hand lamp when necessary.

No smell, no heat, no more choked burners or jolting or blowing out are a few of the advantages which its supporters claim for the electric light over its rival, gas. And it has them—in theory, but like all other things theoretically perfect, practical drawbacks have often caused it to fail to make good. Nevertheless, the solution of the problem of lighting the car will sooner or later be found in the mysterious fluid which has been steadily displacing gas for years, even on railroad trains. The generator set described above is a step in this direction, and a new incandescent lamp recently brought out by Dr. Auer, the well known German physicist, whose invention of the incandescent gas mantle has made him famous. The new lamp is, in fact, merely an extension of the latter principle to electric lighting. Instead of the usual carbonized paper or wood filament ordinarily employed for this purpose, rare chemical earth oxides, such as ceria and thorim, or those used in incandescent gas mantles, are substituted. With



this aid the usual 4, 6 or 8 candle low voltage lamp which usually belies its rating, but must perforce be used, owing to the limitations of the supply, is said to give a brilliant light with great economy in current consumption. The inventor is reported to have made an exhaustive study of the subject before placing the results of his labors on view, so possibly there may be more in the usual first reports of a "revolutionizing" discovery that is to shelve present methods than is ordinarily the case.

How Mrs. Gould Fooled the Ferrymen.

Despite the fact that the amendment to the ferry bill, permitting cars to run on and off ferryboats under their own power, passed both houses, the Long Island Railroad ferry has chosen to exercise its prerogative in not allowing automobiles to board or leave under their own power. When Mrs. Howard Gould's automobile reached the ferry the chauffeur attempted to pass the gates under the car's power, but was stopped by a gateman. The party was holding up traffic at the gate, and a hackman offered to do the towing for $2. On reaching the other side the hackman wanted $2 more for towing the automobile off the ferry, which Mrs. Gould refused to pay, saying that she would not be imposed upon. For some time the automobile was left standing on the boat directly in the way of vehicles which were waiting to go on board. Through this action on the part of the ferryboat officials one trip was lost, and they finally had to push the car off the boat without any compensation.

Blacksmith to Build Garage.

Blacksmiths are not usually given to constructing additional garages for automobiles; still this is what a Michigan smith has decided to have done. He has discovered the difficulty experienced by automobilists in finding suitable accommodation for their cars when staying over night in small towns.

For Sweet Charity's Sake.

C. E. Haskell, of Cedar Rapids, Iowa, has gone on record as being the first man in that State to give an automobile for charitable purposes. The car will be raffled to help pay off the mortgage on the Sunshine Mission, in that city.

RACING SITUATION CLEARS

Middle West Thinks Everything Now Serene and a Prosperous Year Ahead.

According to Western Opinion, the trend of thought in the Windy City, where racing matters are concerned, recent events which have occurred subsequent to the Florida races have smoothed out all the kinks. The following from The Chicago Evening Post may be taken as indicative of the opinion entertained generally in the Middle West:

"It is now generally believed that nothing will come of the attempt to get control of automobile racing from the A. A. A. William K. Vanderbilt, Jr., William Wallace and H. L. Bowden have withdrawn their resignations from the racing board, and with the election of Elliot C. Lee, of Boston, to the presidency, the A. A. A. bids fair to have a more prosperous year than ever before. The first sign of dissent from the authority of the A. A. A. was seen at Ormond. Here a certain coterie availed themselves of the disadvantageous conditions of weather and of tide to raise the cry of "inefficiency." Looking at the affair from this distance, it is now seen that the leaders in the rebellion, in a covert way, put more than one obstacle in the way of a successful meet. A number of those who at first lent their support to the new movement have reversed their position, as they now appreciate that they were misled by certain persons who, in the various positions they have held in the industry, have gained the reputation of "working both ends against the middle.

"It is the prevailing sentiment that automobile racing should remain in the hands of those who are in the game for sport alone. There is no question that those who have expended their time and money freely to develop racing in this country should not be compelled to step aside to make way for those with other motives. Aside from these considerations, there is the all important question of the attitude of the European racing bodies. Abroad, the control of racing is in purely amateur hands, and it is quite certain that they would not recognize any body in this country which savored of professionalism."

How the King Expressed His Displeasure.

To demonstrate his opinion of the badly regulated traffic in Brussels, King Leopold twice visited the Automobile Salon there with his carriage and horses. This caused considerable comment, and when approached on the subject the King gave as his reason that the conditions of traffic were so bad and progress so slow through the crowded streets, that it made automobile travelling in town very unsatisfactory.

As an Aid to Smuggling.

French customs officials at Hallium are reported to have captured an automobile containing four hundredweight of smuggled tobacco. The movements of the car had for several days attracted attention of the customs inspectors, as trips were continually being made across the Belgian frontier and back.

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MASSACHUSETTS CLUBS PROTEST

President Lee of the M. A. A. and Others Succeed in Softening Drastic Bills.

Daniel E. Leary, of Springfield, appeared on behalf of the Springfield Automobile Association before the committee on roads and bridges Tuesday morning at Boston, together with a number of other attorneys, on three automobile bills. He advocated slight amendments in the bill submitted by the highway commissioners, covering revocation of licenses and punishment for violators of the law, while he heartily indorsed the bill to permit the commissioners to raise the speed limit for certain roads after public hearings on the cases as they came up. Those present in favor and in opposition to this second bill finally agreed to accept a bill to permit an appeal to the highway commissioners, over all local unreasonable speed restrictions. Some such bill may be reported.

On the first bill, providing for revocation of a license on three convictions; for the carrying of only one registration number, and that a Massachusetts number by every automobile, and for increased penalties, Lawyer Leary argued that it should be amended so any one number, Massachusetts or otherwise, should be carried. He stated it as his opinion that the present trouble is the fact that some automobiles carry half a dozen numbers, rather than any trouble over telling what State the registration is in, for all the States have distinctive styles of numbers. President Elliott C. Lee, of the Massachusetts Automobile Association, sustained Mr. Leary in his point that a law requiring solely a Massachusetts number would be burdensome in the neighborhood of State boundary lines.

Chairman William McClintock, of the commissioners, made it plain that the board wants to hit at reckless foreign operators. Everyone present appeared to favor more drastic punishment, and an amendment, generally approved, was submitted calling for a fine of not exceeding $25 for first violation of speed laws, $50 for second offense and $500 or six months' imprisonment or both for subsequent offenses.

On the bill to abolish all local speed laws, thus establishing the State laws of ten miles an hour in cities and fifteen outside, and to permit the highway commissioners to make special rules for special roads after proper hearings, Chairman McClintock said: "If the State has paid $75,000 to build a good road which happens to pass through Russell, and that town fixes a limit of four miles on that road, the authority for fixing the rate should be put in the hands of someone else. Perhaps half a dozen towns in the State have unreasonable rules, while the great majority have none at all." This provision to allow local authorities to make rules will be struck out, and the State will have sole power to fix the speed limit.

No one at all appeared in favor of the freak bill to require automobile machinery to be so constructed that speed laws could not be broken, and the committee will recommend leave to withdraw in this case.

Pennsylvania's Law Ridiculed.

Defects in the automobile laws of Pennsylvania had an airing last Saturday night at a reception given by the Automobile Club of Philadelphia to members of the Pennsylvania Legislature, the American Automobile Association and other men who are interested in the progress of the automobile.

The present Pennsylvania State law, which permits many townships, cities and boroughs to reduce the speed limit of twenty miles fixed by the State, was the target of most of the speakers. Winthrop E. Scarrett, of New York, former president of the Automobile Club of America, was the most bitter in denunciation of the "short-sighted legislation of benighted communities which make ten miles the limit of speed for an automobile."

There was a sign of a little commotion when Mr. Scarritt referred to the "benighted communities" where automobilists are limited to a speed of ten miles an hour, for this is the limit permitted in many of the townships near Philadelphia. Lower Merion Township, where this law is in effect, was represented by State Senator Roberts, who winced a little at the carefully measured words of the New Yorker, but took them in good parts, as was shown by his subsequent speech. Mr. Scarritt's speech was essentially the same as the one delivered before the Automobile Club of America, New York City, last week, and the speaker advises the revocation of license of wealthy car owners of "harum-scarum, dare-devil chauffeurs, who drive through the streets recklessly, and seem not to mind in the least punishment by fines."

Mayor Weaver, of Philadelphia, was the principal speaker of the evening, and he put himself on record promptly as the friend of the automobilist and promised emphatically to do all in his power to aid them in Philadelphia. The feature of the Mayor's address was that an automobile going at the rate of twenty miles an hour is even more tractable than a horse going eight miles an hour, and, if possible, fairer laws should be made for the automobilists.

After listening to Mayor Weaver, Mr. Scarritt and Secretary Gillette, of the A. A. A., Toastmaster Chandler introduced State Senator Algernon B. Roberts. Mr. Roberts said that, after listening to the defense of the automobile by Mr. Scarritt, he had recognized that much injustice had been done the automobilist. He prophesied, however, that a new era in automobile legislation was dawning, and that by the co-operation of the automobilists with the State Legislature a more acceptable law would undoubtedly be placed on the statute books of the State.

NEW JERSEY STILL AT IT

Scovel Bill and Amendments to Supersede Gibbs's Creation—License Fee $5.

Assemblyman Harry S. Scovel has introduced in the New Jersey Legislature several amendments to the present Scovel automobile law, and Representative Gibbs' bill will likely be tabled, and the Scovel amendments passed in its place.

Section 2 of the act, entitled "An act defining motor vehicles and providing for the registration of the same and uniform rules regulating the use and speed thereof," is amended so as to read as follows:

"Every resident of this State who is the owner of a motor vehicle, and every non-resident owner whose motor vehicle shall be driven in this State, shall file in the office of the Secretary of State a declaration duly verified that such owner is competent to drive the motor vehicle for which application for license is made, and a written statement containing the name and address of such owner, together with a brief description of the character of such motor vehicle, including the name of the maker and the manufacturer's number of the motor vehicle, if number there be, and the rated horsepower of the motor vehicle, and shall pay to the Secretary of State an annual registration fee of $5 for each motor vehicle; the Secretary of State shall issue for each motor vehicle so registered a certificate, properly numbered, stating that such motor vehicle is registered in accordance with this section, and shall cause the name of such owner, with his address, the number of his certificate and a description of such motor vehicle, or motor vehicles, to be entered in alphabetical order of the owners' names in a book to be kept for such purpose; this section shall not apply to manufacturers or dealers of motor vehicles in this State, except as to vehicles kept by such manufacturer or such dealer for private use or for hire."

Section 3 is amended so as to provide that no license number except that issued by the State of New Jersey shall be carried on machines, and another amendment provides that any owner displaying a fictitious number shall be liable to a fine not exceeding $50 or imprisonment for not more than thirty days.

It is provided in an amendment to Section 9 that any person driving an automobile on public highways in a race or on a bet or wager shall be subject to a fine of not more than $50 or imprisonment for not more than ten days.

An important proposed amendment is that which provides that any constable or police officer may arrest persons charged with violation of the automobile act without warrant. The last amendment provides for the amount of fine which shall be inflicted for violations of the various sections of the proposed statute.

The present speed limit of twenty miles an hour on the highways of the State will not be changed, but the license fee will be raised from $1 to $5.

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Successful Car Building.

WE are this year standing firmly on the fact that we have built a real car, because we have built a car adapted to American conditions, American roads and the American temperament. We know our American market as no French builder can know it.

We have surmounted the problems of car-building this year as we never surmounted them before, although our progress has been steady and on right lines.

We believe the Pierce car to-day expresses the best that can be had in car-building, and we are willing to abide by the result of actual experiment.

Booklet describing the six 1905 cars of the George N. Pierce Company, with special booklets describing the mechanism of each, will be sent on request.

The George N. Pierce Company,

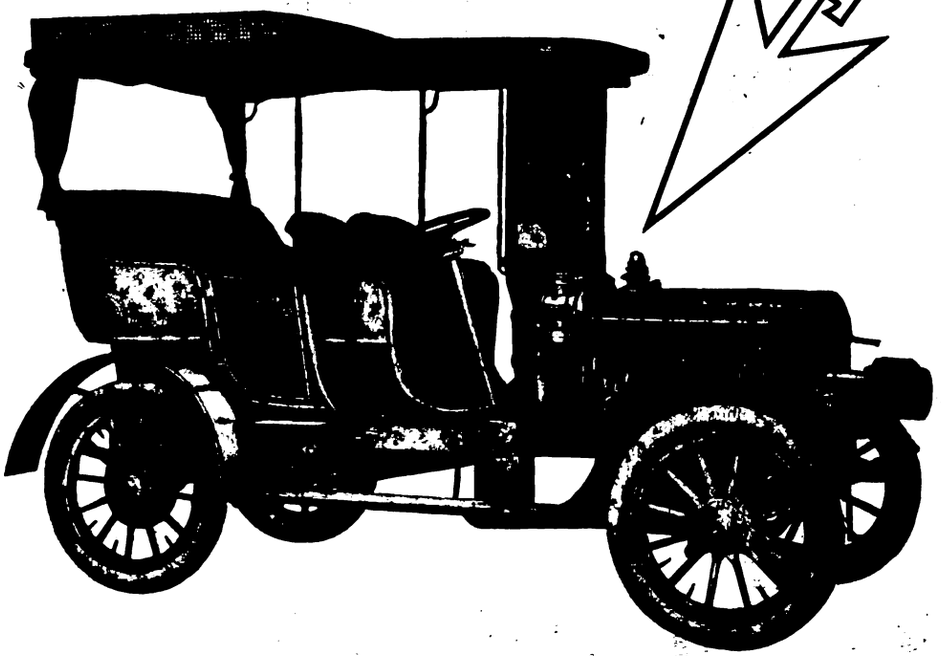
BUFFALO, NEW YORK.

Manufacturers of Pierce Cycles.

Members of the Association of Licensed Automobile Manufacturers.

The 24-28 horse-power Pierce Great Arrow Car, King of Belgium Tonneau, with side entrance, equipped with full canopy top, with sliding glass front and drop curtains side and rear.

PRICE, $3,500. Top extra.



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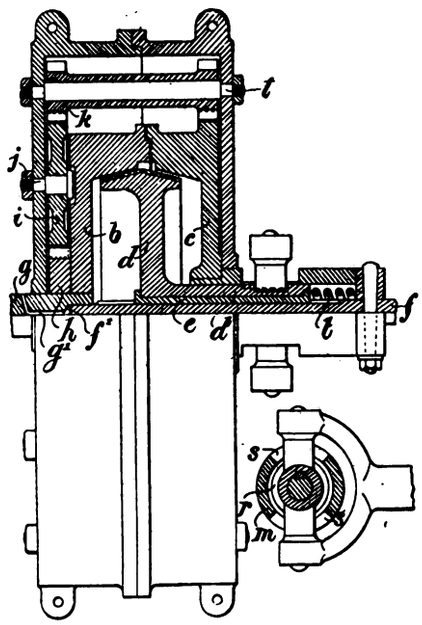
FRICTION CLUTCH REVERSE

Combined Clutch and Reversing Mechanism—Much is Claimed for English Invention.

Up to the present writing the principle of the friction clutch has apparently not been taken advantage of for any other purpose than connecting the engine with the transmission, a role in which it has proved eminently successful and a method so generally in vogue as to be denominated standard. An English inventor, however, has recently devised a combined clutch and reversing gear, both employing friction as the holding power. According to the Cycle and Motor Trader, a British contemporary, from which the following description is taken, the invention "is designed with a view to enabling motor cars to be reversed much more quickly than by the methods commonly in use."

The gear complete with its encasing is shown in half section in the larger sketch, while the smaller illustrates the detail of the connection of the manipulating lever and its collar. In brief, the device consists of a male member revolving between two female members, with either of which it is adapted to be readily interlocked by means of the lever in question. On the forward drive the clutch D, which is the central male member provided with diverging leather covered faces, engages the clutch B, and thus rotates the transmission shaft F without any intermediate mechanism exactly as in the usual type of flywheel clutch. When it is desired to reverse, the central clutch D, which is in reality in the nature of a flywheel, is engaged with the opposite member C, by means of the striking lever actuated by the usual foot pedal, and the shaft is then driven through the pinions H, I and K. The engine shaft G is rigidly connected with the clutch B and the pinion H. The latter meshes with I, an idle pinion mounted on a stud bolt attached to the gear box. The pinion I also engages the teeth of the double pinion K, mounted on a shaft extending across the end of the gear box over all the clutch members, and its second teeth mesh with those of a pinion mounted on the reversing clutch C. The transmission shaft runs in a bearing on the end of the engine shaft G, the sleeve M being so placed as to take the end thrust of C when in operation. The tension of the spiral spring shown serves to keep the clutch B, or the forward drive, normally engaged.

The meeting edges of the clutch members are so shaped as to prevent the entrance of oil, and projections are further provided to throw off by centrifugal force any oil that drops upon them. The clutch D is intended to slide on the usual square shaft. One or more sets of the pinions for the reverse may be used, and the size varied so as to make a convenient ratio of speed between the forward and reverse. Thus with the clutches geared in the ratio of 4 to 1, the forward speed would be four times that of the reverse, or twenty miles ahead and five backward, or in like proportion. Releasing the pedal half way when on the forward speed places the engaging clutch in a neutral position and cuts off the power, then depressing the other end would reverse at a slow speed, thus obviating the necessity of shifting the change speed lever when necessary to reverse quickly.



Without taking into consideration the difficulties to be met with in its application to prevailing methods of sliding gear transmission and reverse, the device in question is deserving of attention, but as a substitute for the present combined transmission and reverse it falls far short of compensating in added effectiveness for the simplicity it displaces with uncalled for complications.

Automatic Road Making.

In Austria all vehicles built for a load of more than two and one-quarter tons must have wheels with rims at least 4 1-3 inches wide, and if built for more than four and one-half tons or more than three and one-half tons the rims must be at least 6¼ inches broad. In lower Austria a width of rim of 4½ inches is required for loaded wagons drawn by two or three horses. In Bohemia the same regulation applies.

In France every freight and market wagon is a road maker. The tires are from three to ten inches in width, usually from four to six. With a few four wheeled vehicles used the tires are rarely less than six inches in width, and the rear axle is about fourteen inches longer than the fore axle, so that the rear, or hind, wheels run about one inch outside of the level rolled by the front wheels.

In Germany the rule prescribes that all the wagons drawing heavy loads, such as coal, brick, earth, stone, etc., must have tires at least four inches wide.

"Motorcycles: How to Manage Them." Price $1. The Goodman Company, 154 Nassau Street, New York. ***

NAPIER AS AN ORIGINATOR

S. F. Edge Thinks Six Cylinders an Ideal That All Will Follow in Time.

It will doubtless come as a surprise to the automobile world in general and in this country in particular, to learn that the French makers are copying their English cousins across the Channel, but, as S. F. Edge, of Napier fame, is sponsor for the statement, it must at least be credited with some foundation in fact. In a letter to a foreign contemporary the authority in question states that he has more than once pointed this out, and as hostile criticism has resulted, he takes an extract from an article in L'Auto on the Gordon-Bennet Cup race to support his contention:

"Our readers cannot fail to be struck with the fact that the majority of competitors for the 1905 cup have fixed their choice on six cylinder motors. We will explain the reasons which militate in favor of this choice.

"From the augmentation of the number of cylinders we get two improvements, first better balancing, second no dead centre in the motor.

"If we compare motors of the same power but with a different number of cylinders revolving at the same speed, and if we take as similar the weight of the flywheel of the single cylinder motor, the weights of the flywheels of the other motors will be as follows:

"For two cylinders set at 180 degrees, 0.63; for two cylinders set at 360 degrees, 0.39; for three cylinders set at 240 degrees, 0.20; for four cylinders set at 180 degrees, 0.07; for six cylinders set at 120 degrees, 0.01.

"Thus the weight of the flywheel of the six cylinder of equal power is scarcely the hundredth of the weight of that of a single cylinder motor; moreover, such a motor having no dead centre, can work without a flywheel. In addition to this, the six cylinders realize a perfect balance from the point of view of vertical efforts, and, as M. Drouin has remarked, there does not exist any dead centre in the plan of cylinders, and the perpendicular dead centre being very slight, the car acquires exceptional flexibility. Does this mean to say that it would be interesting to carry the number of cylinders above six? No; for the increase of this number would bring forth no improvements as regards balancing; as to the reduction of the flywheel which might result therefrom, it is practically nil, and would be far from being compensation for the greater complications and the increase in length.

"This is most interesting to me, as it is due to the careful thought and brains of Mr. Napier that England has initiated a six cylinder motor car, which, although expensive to make, is to-day the motor car de luxe, and, as I have said from the commencement, it will only be a matter of time before the whole world of motor constructors for their best carriages follow the British lead and use six cylinders, which for any given horsepower are infinitely smoother and quieter than a four cylinder car."

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HINTS ON VARNISH.

Some "Dont's" and Various Precautions Necessary in Finishing.

The varnish room should be partitioned off from one end of the paint shop. Paint the floor, paper the ceiling and walls with white paper to reflect the light, and have wide sliding doors.

Keep the varnishing shop clean. Do not sweep while a job is on hand. Steam heating for winter is best, but if a stove is used let it be in the paint shop, with pipe running into the varnish room. Have a thermometer in the room, and at the end of the room furthest from the source of heat. Keep it about 70 degrees Fahrenheit.

It is very important to keep the temperature of the varnish room even. Varnish applied while the temperature is low will flow and cause trouble if the temperature be raised before the job is dry. If the room be warm, then allowed to become cool, the brilliancy of the varnish will suffer.

A fresh can of varnish should be opened a day or so before being used to allow the gas to escape and sediment fall to the bottom. The varnish should be kept in the varnish room, at the temperature of the room and the job.

All the brushes needed in the varnish room should be kept in a closet in that room. The varnish cans may also be kept there.

If you do not allow varnish coats and filling proper time to dry you will have trouble with the finish, as the soft undercoats will absorb the oil from the varnish, cause sinking in, sweating, etc. Moisture, greasy fingers, temperature variations, etc., produce their crops of varnish troubles. Be attentive to small details.

For varnish blooming try washing it with cold water. If this does not cure it, flat and revarnish surface.

Rubbing out the rough stuff should be done in the paint shop, and the way to do it is to begin at the upper panels, one at a time. Rub with an even and gentle pressure, using pumice sparingly. Start from the outside edge of the panel, rubbing toward the centre. Wash off the panel as rubbed off, clean out the corners and dry with a clean chamois. When done with the rubbing, run the job into the varnish room. Have a clean pail, sponge and chamois, and with clear water wash off the job thoroughly. Then touch up any cut edges with dead black color. You are now ready for varnishing.

See that the varnish pot is clean. See that the varnish brush is right. Have the best you can get. Have a second varnish pot to scrape the varnish brush into. A half-elastic brush is good. If too stiff of bristle the varnish will show up rough. If too soft of bristle, the varnish will not spread well.

Always varnish those parts first that are the most inaccessible, so that you will not get in contact with them afterward. When doing the panels, flow the edges with the small flat brush, being careful not to overflow those parts which were finished when the job was first coated. The edges done, take the oval brush, of a size to suit the panel, then flow the varnish all over. Flow it on more with the sides than with the end of the brush, the idea being to lay it on rather than to brush it on.

The less varnish is brushed out the more brilliant will be the gloss. Spread it evenly with as little working as possible. If it is a small panel, do not finish up at once, but go on to the next panel, after which come back to the first panel, which then will have a little tack and will take and retain more varnish. A large panel is best done at once.

When doing the small panel in the way indicated, clean out all the corners with the tip of the small flat brush. With the large brush lay off the panel from left to right, and at once finish it, up or down. See that the corners are all right. This method applies to all kinds of coach varnish. Some workmen reverse this operation; they lay off either up or down, and finish horizontally, either from left to right or right to left, but never both ways. They clean the corners very carefully. But this method is only possible with finishing varnish, as a harder varnish has not elasticity to flow out right.

The handling of carriage varnishes is one of the most delicate operations connected with the trade, and while rules or methods carefully described have their value, it takes, after all, years of careful experience to enable the workman to do a job successfully, says "The Wheelwright." Experience steadies his nerves, it teaches him the nature of the different kinds of varnishes used, and in time he can handle them easily and successfully. He finds that a hard varnish sets more quickly than the elastic sorts, and will not flow out the same, hence requires different handling. The elastic varnish flows well and flows down over the panel, making a smooth, even surface.

A Dashboard Reminder.

A manufacturer of automobiles on the other side is having placed over the dashboard of every car sent out a card with the following list of maxims for the benefit of the driver:

"Passing cyclists and horse drawn vehicles, give the maximum space possible.

"Passing restive horses, use the utmost consideration, even to stopping the engine, if necessary, although no hand may have been held up. On narrow parts of roads, crossroads, corners and bridges, drive slowly and with caution.

"Passing through towns and villages and at roadside residences, go slowly, so as not to fill houses and cottages and cover gardens with dust, as well as for the safety of the inhabitants and their dogs, etc.

"Passing pedestrians in wet weather, take care not to splash them."

The Fairbanks-Grant Mfg. Co., Utica, N. Y., is pushing its motor lawn mower, and reports quite a number of orders for this energy saving machine.

Frenchmen Impolite?

Although Frenchmen are generally considered the quintessence of politeness, Englishmen and Americans are complaining vociferously of the lack of courtesy shown by automobile salesmen during the past year. One American who had met with gruff treatment said: "Often I have been kept waiting half an hour before receiving attention, and even then I was frequently treated by the employes with an abruptness and lack of courtesy as unbusinesslike as it was ill-bred. Agents should realize that even the best informed automobilists cannot know everything about all the chassis, and that it is but natural for a customer to wish to know something about the article he intends buying, especially when it involves an expenditure of three to six thousand dollars.

"This arrogant way of treating customers has already placed two formerly well known firms in the background commercially, and will certainly relegate others to a similar obscurity unless they learn the elements of ordinary business—courtesy and fairness toward customers."

A foreign publication, in attempting to solve the origin of this newly developed antithetical characteristic of the nation suggests "the 'offhand' manners sprang up with the great rush of prosperity which swept over the automobile market a year or two ago."

Scared the Blacksmith.

The other day Sporty Smith, of Talequah, who owns an automobile and works for the Dawes Commission, decided to run over to Muskogee to spend the afternoon. He expressed a desire to have several congenial spirits accompany him, and they consented.

"Everything ran along well," says the Muskogee Democrat, "until the party reached Eureka, a crossroads blacksmith shop, when the machine went to the bad. The local blacksmith was induced to conduct an examination. He lighted a big torch and crawled under the 'devil' to examine its workings. His torch burned the hose coupling connecting the gasolene tank, there was a 'pouff,' and the blacksmith wriggled out like a snake just as the explosion came. The last seen of him he was going over the hill, wildly waving the torch, and no one has heard of him since. The gasolene burned most of the 'works' off the machine. Homer Needles' expert opinion is that it will cost a hundred to repair the machine, but he says the fun was worth it."—(Kansas City Journal.)

Another Factory for Port Huron.

Judge Goodson, of Detroit, is spending a week in Port Huron, Mich., in the interest of the Kansas City Motor Works. It is understood that a number of Port Huron people have announced their intention of taking stock in the concern, and it is hoped that $25,000 can be raised. If this is done the company will begin the erection of the buildings at once and employ several hundred men at the start.

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MORE ABOUT AIRSHIPS.

Geer Co., of St. Louis, Says Not the Motor—the Motorman to Blame.

While the contribution "Why Airships Don't Fly," which was published in the Motor World of January 12, was designed primarily to prove the importance of motors that "mote" not for a part of the time, but for all of the time, it apparently struck home in St. Louis, where airships that flew once in a while were conspicuous during last summer. It brought from the H. R. Geer Co., of that city, the following communication:

"We note in your issue of January 12 an article signed 'Ariel,' which goes very much into detail as to why airships do not fly. We venture to say, however, that Ariel never visited the Aerodome at the World's Fair, or he would not have written in the way he did. We had during the World's Fair every opportunity of knowing why airships do not fly. Ariel blames the motors. In this he is mistaken. It was not the fault of the motors, but in the way they were handled and equipped. Only one airship that flew or tried to fly had its motor arranged in such a way that it was under control of the operator. It was merely a case of start your motor on the ground and trust to your luck in the air. Thus Baldwin had the most luck.

"Another airship maker we know of had no more idea of a gasolene motor than a pig has of Sunday; it took him a week to find out that he could not start his four cycle 5-horsepower motor with a wipe spark coil while his motor was fitted with the jump spark system. This particular man was a saving sort of a genius, and fed his motor through a Lunkenheimer mixing valve from a quart tomato can wired to the uprights of his machine.

"We know of another case where a 5-horsepower motor was used, but there was no way of cranking the engine except by turning a large fan wheel which was part of the airship. The airship was fitted with a small vibrating coil and two No. 6 Columbia dry cells. The coil buzzed; this was enough. Neither of these airships flew.

"So it is not necessary, as Ariel says, to look to the stars for an answer. As to engine speed, we would be more than pleased to show him at any time motors that are identical to those used by the airship men running at from 2,000 to 3,000 r. p. m. in our shop. They are not 20 or 30 horsepower engines, however, but just plain two cylinder 5-horsepower engines, no masses of iron and aluminum thrown together and no paper and pencil figures that will not hold water, but a good, honestly built engine that will show its rating by a brake test.

"Ariel will have to go further than to the motors to find out why airships will not fly. He is right, however, in saying that the hard earned experience of the motor car builders should be taken in, but this is to be applied to the airship men and not the motor builders.

"Now as to the plum hung out by the World's Fair management: They hardly expected it to be plucked. Suppose the railroads in this country in their infancy were put under the same rules as airships are—neither would they have taken the plum. It was quite a while before they could maintain a speed of from eighteen to twenty miles an hour, certainly not in the first year. If Ariel will wait until airships have been in existence as long as the railroads have, perhaps then they will know how to operate their motors. In the meantime let us help them all we possibly can and quit 'knocking.'"

The Geer Companys' experience is not at all contradictory of, but in large part substantiates, the reasons therein given as to why the airship won't fly. Its designer in the majority of instances rigged up a contrivance that would put a schoolboy to shame—in other words, he went ahead utterly regardless of what any experienced motor builder or runner could have told him. It will further be noted that no statement is made to the effect that it is not possible to build a motor to run 2,500 or 3,000 r. p. m., nor that motors of this type have not been built and run successfully—but not by aeronauts. More light may be shed on the question if it be taken into account that the figures of most of the latter necessitate large powers to overcome wind resistance, as in the case of huge balloons, or to give sustaining power, in the case of aeroplanes, and particularly the latter. And that in attempting to gain this every ounce of superfluous as well as much absolutely essential weight is sacrificed.

One man can lead an ass to knowledge, but ten men can't make him think, and it is not alone an impossible but a thankless task to attempt to help the man who believes himself beyond assistance. "Knocking" will, on the other hand, lead him in the fulness of time to see the error of his ways, and, coincident with this, will help the man who has been trying to help him all along—the motor designer and builder. It was in no disparaging spirit of the latter that one of the thousand and one reasons why airships won't fly was attempted to be set forth, and there was certainly no necessity to duck or take the blow home.

Lunnon's Ancients To Go.

The ancient, time honored and advertisement plastered 'Lunnon' 'bus is finally to give way to its motor driven superior. Already the motor vehicle is plying for hire in the main thoroughfares, and crowds are gathering at the termini for the chance of a ride, says one of our English contemporaries.

"The A. B. C. of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price 50 cents. The Goodman Co., 154 Nassau street, New York. ***

Another "Revolutionary Invention."

A Western crank has invented an automobile hobby horse to be hitched in front of a car so that, to quote the inventor, "horses will not be frightened by seeing automobiles going along the street without any visible means of propulsion." This wonderful genius, with rare acumen, has foreseen that this arrangement might meet with some objection on the part of automobilists, and he thinks to atone for any inconvenience, real or imaginary, by making the dummy equine the receptacle for extra tires, gasolene and other essentials. The dummy animal is made of metal, and is supported by a swivel wheel secured under the fore parts of the animal. The hindquarters of the steed have attached thereto a pair of plates, which are to be fastened to the rear axle of the car. By raising the tail of the dummy access may be had to the interior of the body, which space offers a place for storage. A lamp is fitted in the head, with the light rays shining through a lens in the animal's forehead. A pair of reins must be held by the chauffeur, "else the real horses on the street might think the automobile steed is running away and become frightened." Verily, the inventive genius should be awarded a life membership in Elbert Hubbard's Philistinic Academy of Immortals, at Aurora, N. Y.—then his ideas might have a chance to develop.

Automobile Now French for Wealth.

"In France wealth formerly meant a box at the opera, but now it is quite as likely to mean a winter automobile tour along the Riviera," says R. L. Hartt, in the Boston Transcript in alluding to the automobile as being the cause of a considerable reduction in the receipts at the Paris Opera. He claims to have seen a good many automobiles outside the opera, but infers that the owners pass only a few minutes in the building.

This state of affairs has practically brought about what Paris has wanted for some time—a popular theatre where the great operas may be heard by the masses at prices ranging from 10 cents to 40 cents, thinks Mr. Hartt. However, he laments over the fact that in the richer and more or less aristocratic circles music is losing the spell it held prior to the advent of the automobile, and sums up his article by disfiguring the Scriptures in saying, "Almost thou persuadest me to be a Paris workman."

New Garage for Minneapolis.

H. S. Haynes, of the Haynes Automobile Co., has closed a contract for the construction of a new garage to be located at the corner of Third avenue and Sixth street, Minneapolis, Minn. The building will have a depth of 165 feet, with a 40-foot frontage. In the front of the building will be the showroom, offices and women's waiting rooms. In connection with an ample storage for cars there will be a first class repair shop. The building will be steam heated, and will have a compressed air blower for dusting out cars and inflating tires. It is expected to be ready for occupancy by June.

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SPRINGS VS. AIR

Inherent Defects of Metal Cause Insurmountable Difficulties.

The problem of finding a substitute for the pneumatic tire that will have all its advantages of resiliency and attendant comfort without its disadvantages is seemingly centring itself on the spring wheel for the time being, and there are those who confidently believe that in this device will ultimately be found the equal of the rubber confined air cushion.

English, German and French inventors have, to judge from the number of spring wheels constantly appearing on the market abroad, given the subject a great deal of study, while in this country mention of the device merely seems to call forth a smile. Serious attention does not appear to have been accorded it to any appreciable extent thus far, although it possibly merits attention, at least to a degree sufficient to make it patent that further investigation would be an utter waste of time. Of course, nothing has been thus far evolved that has the same resilient and shock withstanding properties as the air cushion, and its application on principles worked out as the result of many years' experience leaves nothing to be desired where effectiveness is concerned; but the necessity of using rubber as a confining material make it such an expensive adjunct of comfort that until a more economic method of attaining the same end is reached investigation along this line will be unceasing.

Whether the inherent defects of metal as a shock absorbing medium can ever be overcome to a degree that will place it on a level with air for this purpose is indeed questionable. Even should such a thing as an automatic tension spring, to which a smooth pavement or a rough, rocky road would be the same thing, ever become a practical possibility, there is the further difficulty of rapid crystallization of the tempered steel, with its consequence of brittleness and frequent breakages to be taken account of, on the one hand, and the loss of power in the springs themselves, or "flabbiness," on the other. And the spring that will soon fracture or lose its power to absorb the shocks transmitted to it by the rim will be equally useless in either case.

It will doubtless come as a surprise to many to learn that the spring wheel is not the result of attempts to replace the pneumatic tire with something better and cheaper, but that the latter's appearance and its rapid rise to a high state of efficiency soon after its invention put an end to investigation where the former was concerned for the time being, and that the present experiments are indicative of a strong revival of interest in the subject. Inventions looking to this end which utilized the properties of the spring date back to the early 30's, and it would be difficult to enumerate the long succession of patents granted on them in the interim.

In its attempted application to the needs of the bicycle and the automobile the spring wheel has assumed every imaginable form, combining devices ranging from absolute simplicity to utter and inexplicable complexity, and many or both of doubtful merit. The fact that the aspects of the problem are not identical, though the end in view is the same, in the case of the pneumatic tire and the hard tired spring wheel, must be taken into consideration, the chief difference being in point of power absorbed. It is a generally recognized fact that the pneumatic tire does not heat to anything like the same degree that a solid tire will under the same circumstances, and the generation of heat is, of course, the only visible indication of lost power in a tire. An understanding of the cause of this difference is necessary to a proper comprehension of the problem.

The internal pressure of the pneumatic tire increases in proportion to the weight of the load to be borne, and the total pressure distributed throughout the air space of the tire will be equal on the total bearing surface in contact with the road to the total weight of the load divided by the number of bearing surfaces or wheels. To illustrate this, a 1,600 pound four wheel car would, if an absolutely even distribution of the weight were a possibility, present a load of four hundred pounds on each wheel, and when pumped up sufficiently to support this load easily the air cushion will then hold the wheel in equilibrium.

But the internal pressure in the tire has been considerably increased by the flattening of the tread where it comes in contact with the road, and this factor, remaining constant on a perfectly smooth road, the only work to be performed by the tire continually would be that due to the bending of the rubber in the side walls. This is practically lost energy, but the fact that the air is continuous all round the wheel, and the pressure is in consequence constant, tends to minimize this. The air is, of course, constantly being displaced as the wheel rolls around, but as there can be no further compression this does not represent any appreciable work, and its effect is overcome almost entirely by the rapidity with which expansion follows compression as each portion of the tire rolls under.

This explanation applies equally to any yielding tire in which the effect of the load must be compression, except that in a solid rubber tire the compression must of necessity be more local, as the continuous and movable air cushion is absent, likewise its resistance to the shocks. As in the modern jacketed gun, the pneumatic tire combats outside forces by a constant internal pressure, except that the proposition is reversed, and it is in the lack of this provision, except as limited by the compressibility of the rubber itself, that the solid tire is at the greatest disadvantage. In consequence, the amount of lost energy is very much greater and manifests itself in the shape of hysteresis-molecular friction in the rubber itself, caused by its repeated compression and expansion and its attendant heating. On a rough road the obstructions causing momentary compression of the air filled tire beyond the normal tend to do this also, but the rapid expansion of the air robs it of its heat in turn to an extent that one practically counteracts the other. Under the same conditions the solid tire is at a disadvantage in that both the operations of compression and expansion generate heat, and in this respect springs present the same drawback, so that it is evident at the outset that the later can never equal the pneumatic.

There are numerous other principles in a wheel's action which must be taken into consideration and the action of a solid tire compared with a pneumatic in detail before all the requirements to be met will be evident. But, as will be apparent from the foregoing explanation of the principle of the pneumatic and its action in use, no one point of the tire carries the entire load or absorbs the shock, and accordingly no series of independent springs, no matter how arranged between the rim and the hub, can accomplish the same result. The initial compression of the spring itself is relied upon to absorb the shock imposed by the jolting by opposing its force against the compression exerted against it, and in order to most closely simulate the continuous air cushion a compensating system of springs must be employed. In this way each bears the same relation to the rim and the hub, but is at the same time so interconnected that the load received by one is transmitted to all the others.

A brief resumé of the numerous different wheels of this type now claiming attention on the other side will suffice to show the extent to which the subject is at present claiming attention there. In one of these, the Empire, a complete equalizing system is employed between the hub and rim, a five pointed star shaped piece of metal being interconnected with both through the medium of moving plates, pins and springs. At first sight this wheel appears extremely complicated; the entire mechanism is inclosed, so that in use the wheel appears to be solid. The Halford is another, but goes to the opposite extreme in the point of simplicity, as it consists of nothing more than three spirally arranged heavy plate springs, each of which includes almost a complete convolution in its spiral. Guide rings are used in this instance to prevent the springs from flying out through lateral shock. Another form utilizes small spiral springs around telescoping sections of the spokes, in addition to a set of plate springs, both of which are located between an auxiliary inner and the outer rim. The three above mentioned are of English origin, and represent but a fraction of the number put forward in that country. The German wheel, or rather several of them, are somewhat similar, and, while utilizing the telescoping principle referred to, seem to rely more for their efficiency on independent units than any corelated system

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such as is essential to success. In France also the subject has come in for attention at the hands of various inventors, but has not reached the same advanced stage of development. It is to be noted that in every instance a solid rubber tire of generous proportions is used as a shock absorber in addition to the mechanical action.

For purely pleasure purposes there is very little prospect of the spring wheel meeting with any great favor, even though it should reach a state where its employment would be good commercial practice, and in regard to the latter smooth pavements are coming to be so universally laid that there is no crying demand for it here either.

Oldsmobiles to Fight Japs.

Six automobile railway cars, which are to be mounted with rapid fire guns, have been ordered by the Russian government for use in the protection of the Trans-Siberian railway. The representative of the Czar who placed the order was Nicholas Summerfeld, of Moscow. The Olds Motor Works have agreed to replace the 8 horsepower motor by one of 30 horsepower, and the cars have been promised, ready for shipment to Russia, within fifteen days from the date of the order.

A seven and a half kilometre straightaway automobile course is being constructed in Germany. The location is about eight miles south of Munich, in the direction of Starnberg, in the Furstenried Park.

As an Aid to Science.

Mingling automobiles with the science of astronomy sounds peculiar, but nevertheless it is being done abroad, and to good purpose. It appears that the secretary of the Paris Astronomical Society has recently employed automobiles for the purpose of transporting observers and material to some point where it is desired to take observations during a limited time, as in the observation of shooting stars. In pointing out the usefulness of the automobile in this science the secretary of the society says:

"It is easy to understand the difficulties encountered in the practical organization of a system of stations for the study of shooting stars, having at once the proper conditions of distance, orientation and comfort, especially as very often the observers have occupations that require them to be absent daily.

"It may be seen thus why, in view of all these contradictory requirements, the plan was formed of using, for the organization of temporary stations, automobiles in which could be quickly transported to the proper localities observers furnished with the necessary apparatus."

Russian Motor Postal Service.

Though backward in pretty much everything else, Russia's postal department has recognized the advantages of the automobile for facilitating the handling of mail, and has in one city, Odessa, adopted a motor service on a small scale, apparently as an experiment. Three automobiles are now employed in this service, two small cars, with a capacity of five or six hundred pounds, and one to carry double this weight, in addition to the chauffeur and two postmen, this one having an 8 horsepower engine. They are geared for a speed of fifteen to eighteen miles, and are designed to mount the heavy grades encountered in that city without any difficulty. The cars in question were "Made in Germany" by the Union Works, of Nuremberg, and are fitted with what is known as the Maurer frictional gear.

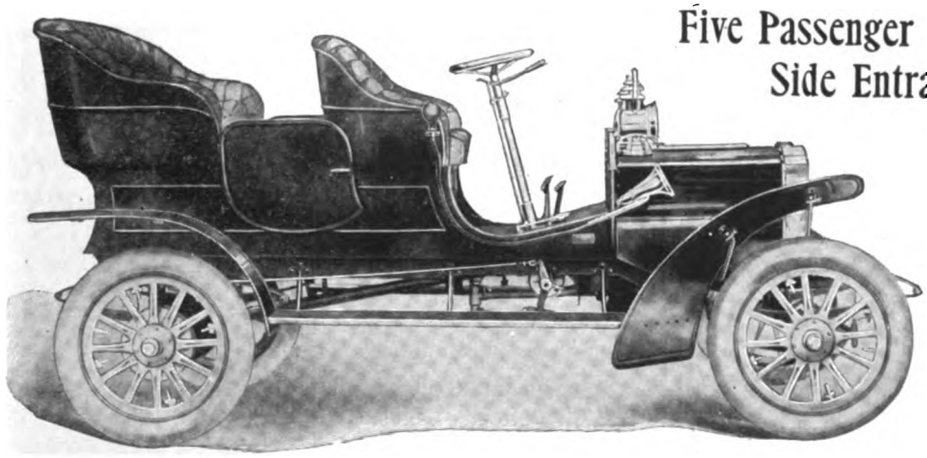
Mrs. Cherry Wants Financial Balm.

A "Green-Cherry" damage suit is occupying the attention of a body of Christian County (Ill.) jurors. Mrs. Margaret Cherry, of Morrisonville, has brought suit for damages in the sum of $2,000 against E. D. Green, a prominent farmer of Ricks township. The plaintiff states in her bill that an automobile carelessly handled by Green caused a horse she was driving to run away, which resulted in painful injuries to her.

Stevens-Duryea Working Overtime.

Orders for the new Stevens-Duryea touring cars have come in with such rapidity since the New York show that the plant in Chicopee Falls, Mass., has been run until 9 o'clock at night. Even by working overtime to this extent cars cannot be manufactured quickly enough, and arrangements are now being made to run the factory all night.

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Weight, 2000 lbs.

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The value of any car cannot be based on any one particular feature. The general construction must and does decide whether or not the car has been built to do the work.

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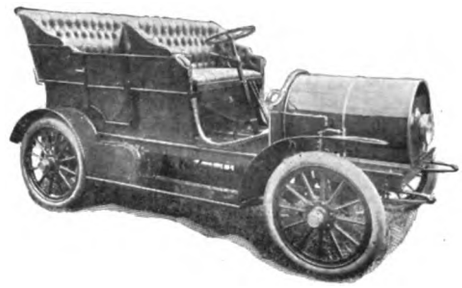
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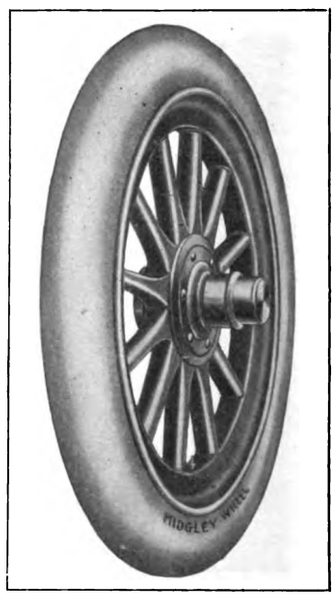
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The Week's Patents.

780,722. Internal-Combustion Engine. Patrick F. Maccallum, Helensburgh, Scotland. Filed May 7, 1901. Serial No. 59,128.

Claim—1. The improved internal combustion engine, comprising, in combination, an expansion cylinder, a piston reciprocating in said expansion cylinder, a combustion chamber located alongside said expansion cylinder, a passage connecting said combustion chamber with said expansion cylinder and a grate adapted to move vertically in front of said passage, substantially as described.

780,798. Automobile. Arba Holmes and Albert Holmes, Carroll, Iowa. Filed August 22, 1904. Serial No. 221,721.

Claim—1. The combination of the ball-and-socket joint, the shafts projecting from the sections thereof, the casing sections, the radially projecting arms on one of said sections, the said arms being rounded in cross-section, the radially-projecting arms on the other section grooved in their inner ends to receive the rounded arms of the first section, and provided at their outer ends with laterally-deflected portions lapping against the ends of the arms of the first section and pivot-points carried by the said deflected portions and projecting into the ends of the arms of the first section, substantially as set forth.

780,812. Explosive Motor. Andreas Radovanovic, Zurich, Switzerland. Filed February 16, 1904. Serial No. 193,834.

Claim—1. In combination, a cylinder having midway of its length internal peripheral exhaust ports, a piston controlling said ports, a piston extension, a mixing-chamber therein having ports adapted to place the cylinder in communication with said chamber, the latter provided with air and gas admission ports and means to supply air and gas to said ports, respectively, said supply and the admission of the mixture to the cylinder controlled by the movements of the piston extension, for the purpose set forth.

780,949. Carburetter for Hydrocarbon Engines. Emil Huber, Detroit, Mich., assignor of two-thirds to Henri G. Ide, Oxford, Mich., and Edmund Sprung, Detroit, Mich. Filed July 8, 1903. Serial No. 164,654.

Claim—1. In a carburetter, the combination of a reservoir for containing gasolene, a rod provided with a longitudinally extending groove in its side communicating with the gasolene in the reservoir, and a wall inclosing a part of said rod and adapted to cover said groove at one position of the rod, said rod being adapted to be moved longitudinally to bring a greater or less part of said groove outside of said walls.

780,969. Acetylene or Other Lamp. James Bartlett, South Tottenham, England. Filed August 27, 1903. Serial No. 170,949.

Claim—1. The improvements in acetylene gas lamps comprising the combination of an outer case and an inner chamber provided with openings for admitting water thereto from said case, a carbide holder formed with a solid conical bottom, a perforated plate provided with a conical chamber, forming the cover of the same and the inner chamber, a curved pipe coupled to the conical chamber and to the lamp case and a purifying chamber at the bottom of said case to which chamber the said pipe and the burner are connected, substantially as described.

780,983. Vehicle Tire. Charles W. Faitout Summit, N. J. Filed June 15, 1904. Serial No. 212,621.

Claim—1. In a vehicle tire, the combination of a flexible tubular casing with a plurality of projecting bosses from the outer surface or tread thereof, a series of yielding supporting members so located on the inside of said casing as to form alternate supports for the same, substantially as described.

781,064. Explosive Engine Crank Casing. Edward R. Hewitt, New York, N. Y. Filed March 23, 1904. Serial No. 199,657.

Claim—1. A two-part casting forming a casing, one part thereof forming the cover, having a compartment for a shaft and having a separate compartment for a generator.

781,065. Clutch. Edward R. Hewitt, New York, N. Y. Filed March 23, 1904. Serial No. 199,658.

Claim—1. A clutch mechanism comprising a set of shoes, means connecting each shoe to the next and comprising a pair of toggle links and an intervening yoke to which said links are separately pivoted, a radial link passing between and outwardly beyond the link pivots in each yoke and pivoted at its outer end to the yoke, and a common controlling member to which the inner ends of the radial links are pivoted.

781,066. Engine Crank Shaft. Edward R. Hewitt, New York, N. Y. Filed March 23, 1904. Serial No. 199,660.

Claim—1. The combination of a shaft having a crank thereon and a passage in said crank leading to the parts to be lubricated, the said passage having an enlarged mouth at its outer end, a crank pit containing free lubricating material, and an inwardly opening valve in said passage adapted to be thrown outwardly and closed by centrifugal force.

781,068. Metal Frame. Edward R. Hewitt, New York, N. Y. Filed March 23, 1904. Serial No. 199,662.

Claim—1. An angle formed by the meeting of two strips, each substantially L-shaped in cross section, both of the webs of one strip being overlapped upon, and directly secured to, the respective corresponding webs of the other strip.

781,069. Control Gear for Automobiles. Edward R. Hewitt, New York, N. Y. Filed April 8, 1904. Serial No. 202,276.

Claim—1. A band brake comprising a pulley, a band thereon, one end of the band having an elongated eye, a fixture to which said end is attached, a cross pin fixed in said eye, a lever consisting of a pair of plates pivoted upon said pin within said eye, a pivot journaled in said plates, and provided with a transverse opening, a tip attached to the other end of the band and passing through the opening in said pivot between said plates, and a nut threaded upon the projecting end of said tip.

781,070. Self-Propelling Vehicle. Edward R. Hewitt, New York, N. Y. Filed April 8, 1904. Serial No. 202,277.

Claim—1. In a self-propelled vehicle, the combination of a body frame supporting a power driven shaft, two axles, spring connections between the frame and axles permitting the axles to approach and recede from each other during the vertical oscillations of the body, a power transmitting chain whose tension is altered by said movement of the axles and means acting upon said spring connections for limiting the approach of the wheels.

781,071. Automobile Body. Edward R. Hewitt, New York. N. Y. Filed July 16, 1904. Serial No. 216,832.

Claim—1. An automobile comprising a running gear, an engine, and front and rear body portions, one of which covers the engine and is mounted to slide to expose the engine.

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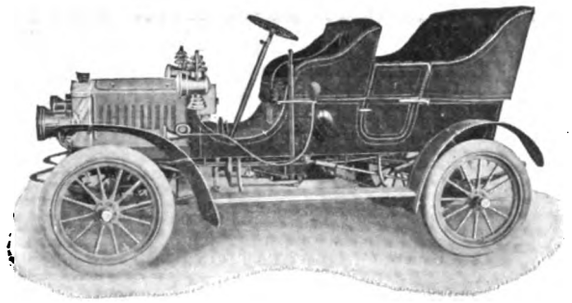
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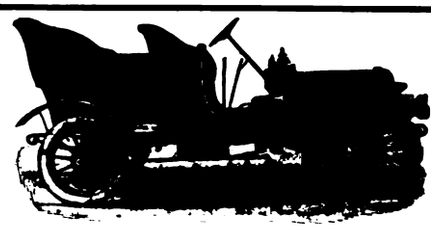
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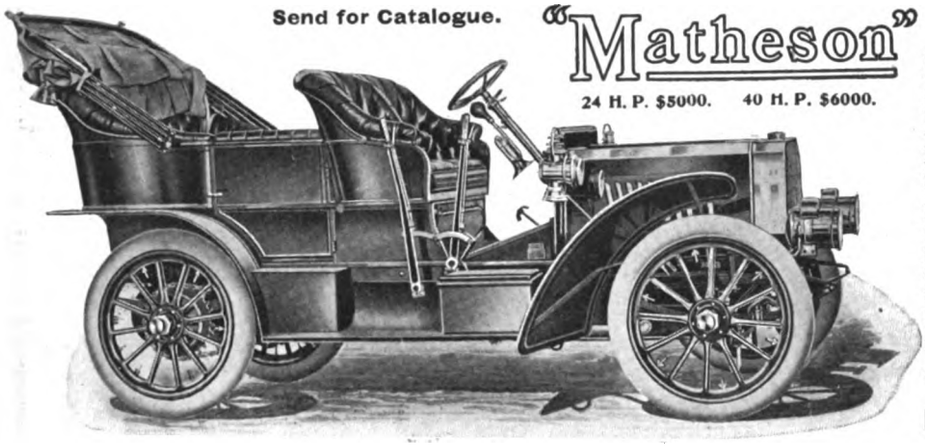
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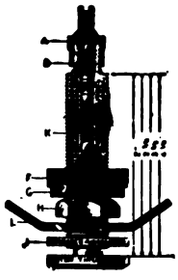
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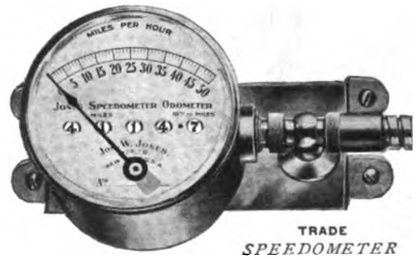
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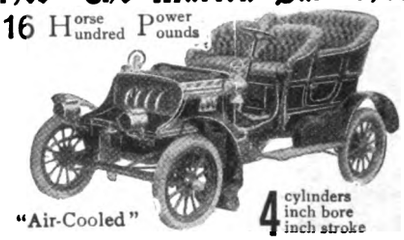
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The marked economy of power wagons for delivery, express and truck service, and their superior reliability when in reasonably intelligent hands, is so well established that those who are conversant with the facts cannot fail to see that power wagons are rapidly beginning to supersede horse service.

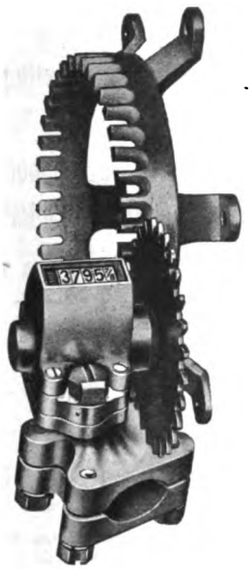
PARTS WE SUPPLY:

STEERING GEAR, COMPLETE, CHAINS, COUNTERSHAFT AND REDUCTION GEARS, FRONT AXLES, COMPLETE, SPROCKETS, COUNTERSHAFT BRAKES, HUB BRAKES, DISTANCE RODS, MOTOR HANGERS, ELECTRIC MOTORS, CONTROLLERS AND ACCOMPANYING DETAILS.

Send for Catalogs Nos. 2, 3 and 8. Touring Car Parts, Catalogs 6, 7, 8 and 9.

FEDERAL MANUFACTURING COMPANY, Elyria, Ohio.

Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.



Veeder

ODOMETERS FOR MOTOR CARS

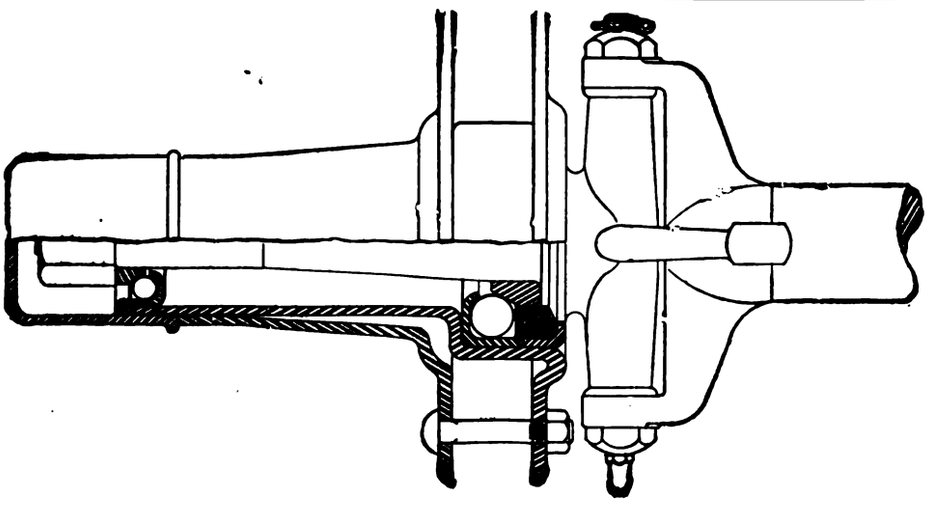
will be on exhibition at our spaces at New York, Chicago, Detroit, Cleveland and Boston, where we shall be very glad to talk with manufacturers of cars concerning the special discount we make to those who equip their output with Veeder Odometers.

Dealers and jobbers are likewise invited to drop in at our booths to discuss the sale of Veeder Odometers for this year.

Automobile owners who wish to see the odometers in actual operation should feel perfectly free to come in and ask all the questions they choose. That is what we are there for.

THE VEEDER MFG. CO., 26 Sargeant Street, Hartford. Conn.

Cyclometers, Odometers, Tachometers, Counters and Fine Castings.



THESE HUBS are drawn from Sheet Steel.

Extremely light and strong Hubs with a smooth surface for finish are obtained.

Center line of Spokes is close to Steering Head. Smooth and Easy Steering is obtained.

Races are GROUND IN POSITION.

Cones and Cone Seats on Spindles are GROUND TO GAUGE.

We manufacture for the trade only.

THE AMERICAN BALL-BEARING CO.

CLEVELAND, OHIO, U. S. A.

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At--Night

DOUBLE SERVICE.

THE APPLE AUTOMATIC SPARKER.

has a two-fold value to every user of gas power for Automobile, Launch or Stationery Engine.

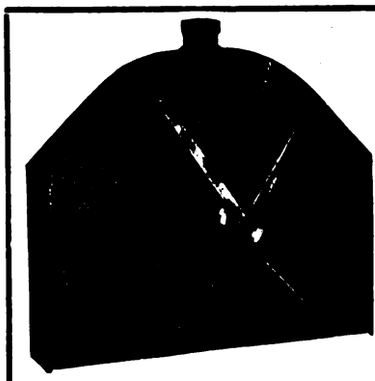
It gives absolutely sure ignition, more speed and more power. Does away with all belt, battery or commutator troubles.

Besides this it gives ample power for three electric lights, whether engine is running or standing still

Easily attached to any engine now using batteries. Our new gear-driven system is worthy of your attention.

Write us for anything pertaining to ignition. We make over eighty articles for ignition purposes. THE DAYTON ELECTRICAL MFG. CO., 91 BEAVER BLDG., DAYTON, OHIO

See us at the Auto Shows at Chicago, Boston and Washington.



THE WHITLOCK COOLER

TESTED AND ADOPTED BY

90 PER CENT

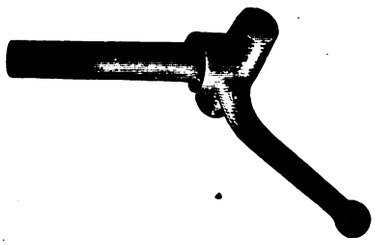
of the Leading Manufacturers of

HIGH GRADE CARS FOR 1903-1904-1905

U. S. Patents Pending. Patented in England, France and Belgium.

Any Design or Style of Cooler Made to Order.

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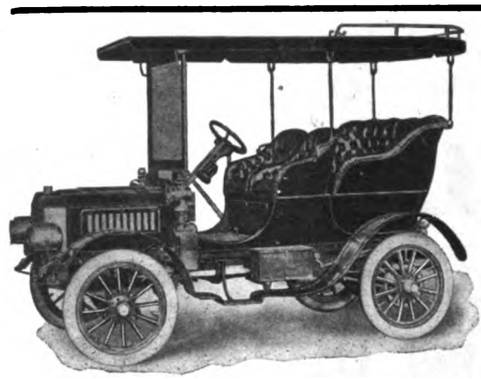


STOCK AUTOMOBILE FORGINGS

ARE OUR SPECIALTY.

They are materially and mechanically correct. It is economy for you to use them if possible. If not, then our unrivalled facilities enable you to get special Forgings promptly. Send specifications.

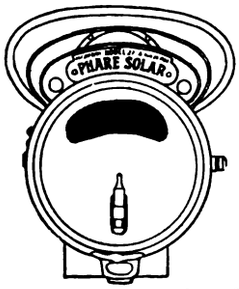
THE BILLINGS & SPENCER CO., Hartford, Conn.



Aluminum Canopy Tops,
Extension Tops,
Three-Bow Leather Tops,
Cape Cart Tops,
Seat Upholstering,
Aprons and Hoods.

LEINBACH BROS., 253-255 Jefferson Ave., DETROIT, MICH.

Oldest Canopy Builders in America.



THE GOLD MEDAL AWARD

at the St. Louis World's Fair simply confirms our repeated statement that best materials coupled with skill and care in construction have placed

SOLAR LAMPS

in the first rank. You who have used them know this, you who have not should be convinced by this Award. You, Mr. Dealer, should insist upon them as equipment, for your customers will demand Solars. No lamp troubles with Solars.

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YOU TRY NO EXPERIMENTS

WHEN YOU TRY OUR

PRESSED STEEL FRAMES.

The Leading Makers of the Industry Have Long Ago Proved Their Worth.

We Make Them from the Highest Grade of Cold Rolled Steel under Perfect Conditions of Manufacture.

Accuracy and Quality Guaranteed.

See Specimens at the Madison Square Garden (New York) Show, Section A, Concert Hall, or send drawings and get our prices.

CLEVELAND CAR SPECIALTY CO.,

CASE AVENUE and LAKE STREET, CLEVELAND, OHIO

"The A.B.C. of Electricity"

will help you understand many things about motors which may now seem hard of understanding.

108 Pages. 50 Cents Per Copy.

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The Best Automobile Motors

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Automobile Charging Machines

ARE MADE BY

THE ELWELL-PARKER ELECTRIC CO.,

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YOU CAN SEE YOUR FINISH
WHEN YOU USE
FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

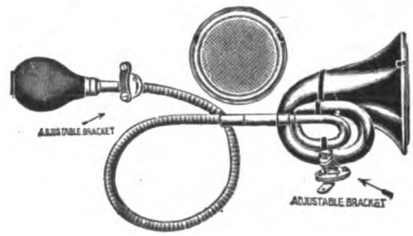
A big and profitable seller to all jobbers, dealers and garages.

OUR PROPOSITION IS INTERESTING.

Send us a trial order.

FISK MFG. CO., Springfield, Mass.

LA TUBA HORN



THE latest European idea of a horn. Note extra coil in the body of horn which produces a deep and melodious tone. Two sizes, $10.00 and $12.00 each. complete.

We have in stock forty other sizes and styles of horns Catalog mailed on request.

CHARLES E. MILLER,

Manufacturer, Jobber, Exporter and Importer,

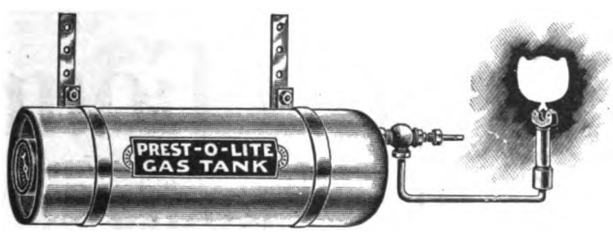
Home Office—97-99-101 Reade St., New York City.

Retail Branch: Broadway and 38th St., N. Y.City.

Boston Branch: 202-204 Columbus Ave. Boston, Mass.

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The Prest-o-Lite Gas Tank



The new system of acetylene lighting for automobiles and launches. More than 1,000 Prest-o-Lite Tanks sold since September 1st. More than 100 of the best agents in America have placed orders for Prestolite Tanks.

TEN THOUSAND Tanks will be sold in 1905. The wide-awake dealers are signing up agencies now. Write us for catalogue and full information.

The Concentrated Acetylene Co.

INDIANAPOLIS, IND.

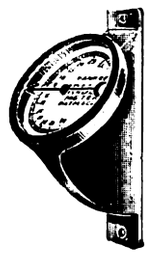
Chicago Show Space, 326.

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Largest Manufacturers of Auto Specialties in the World

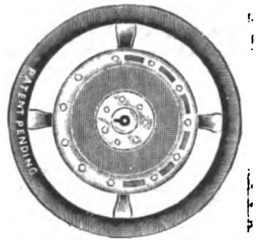
PREB ELECTROTYPES TO CATALOG HOUSES AND OTHERS.

YANKEE GRADE METER
PRICE $7.50



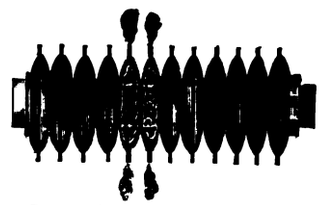
Positively accurate, only dash grade-meter in the world. Easily read from the seat All grades to 35 per cent up or down.

YANKEE NON-VIBRATING STEERING WHEEL
PRICE $10.00



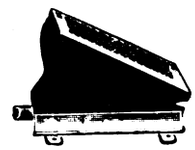
Does away with that uncomfortable feeling in the arms caused by vibrating wheels on long tours. Central diaphragm—made of flexible leather and rubber. Has greater tensile strength for steering purposes than any other wheel

YANKEE SILENT AUTOMATIC MUFFLER
PRICE $10.00



Composed of 24 opposed disk radiators on end of exhaust pipe. Burnt gas discharged through thin outer edge of radiator No back pressure because point of discharge greater than bore of exhaust pipe Self cleaning and noiseless.

FOOT BELLOWS FOR HORN
PRICE $3.00



Will give louder blast and outwear a dozen bulbs.

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Discount to Jobbers, Manufacturers and Dealers.

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Protection for Man and His Motor

RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

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AUTOMOBILE EQUIPMENT COMPANY
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Jump Spark Coils

For all purposes—Single, Double, Triple and Quadruple for Stationary Engines and Automobiles. Guaranteed in every particular. Fine Vibrator.

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AUTOMOBILE-BODY
DEPARTMENT

EMERSON BROOKS, Manager.
1534 Broadway, cor. of 45th St., New York.
Telephone, 6536-38th St.

TOURING CAR

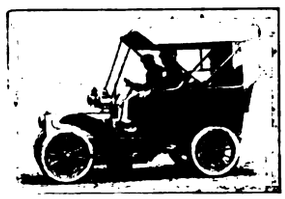
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Specify
BRISCOE RADIATORS
on your car

To Operators of Steam Cars:

Write us for printed matter on the NELSON STEAM WATER PUMP, the only positive high pressure boiler feed.

JOHN SIMMONS CO.,
104-110 Centre St., New York.



Springfield Top

PATENTS PENDING.
Aluminum Bodies
Aluminum Fenders
Aluminum Hoods.

Springfield Metal Body Co.,
366 Birnie Ave.,
Springfield, Mass.

CHEAP MATERIALS.

In the South, Manufacturers of all kinds are in position to Assemble their Raw Materials Cheaply, while Exceptional Transportation Facilities place them in touch with all the Great Markets, North, East and West.

THE SOUTHERN RAILWAY

Traverses Sections of the South which arh growing faster than any other part of the United States.

If looking for a location, or an investment, write,
M. V. RICHARDS, Land and Industrial Agent,
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BALDWIN CHAINS AND SPROCKETS

The Baldwin Chain Company
— MAKE —
Automobile Chains, Sprockets, Spur and Beve Gears.

Baldwin Chain & Mfg. Co.,
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THE HILL PRECISION OILER

Measures the Oil for the Bearings, and Always Sends it there.

THE STEEL BALL COMPANY,
832 Austin Ave., Chicago, Ill.

Non-Freezing Water Jacket Solution

(SOLVAY PROCESS CO.'S)

will stand 30° below Zero Fahr. without Freezing.

For sale by all Automobile Supply Houses.

THE CARBONDALE CHEMICAL CO., Carbondale, Pa.
NEW YORK, BOSTON, BALTIMORE, CHICAGO, PITTSBURGH

STA-RITE
"STAYS RIGHT THE LONGEST"

The Most Satisfactory Ignition Plug in the World at any Price.

$1.50; $1.75; $2.00; $3.00; $5.00.

Dynamos, Coils Meters, tc. Send for complete Catalogue.

THE R. E. HARDY CO, 225 W. Broadway, NEW YORK.

LEON RUBAY

FRENCH AUTOMOBILE SUPPLIES

140 West 38th Street, New York.



HIGH-GRADE LAMPS

Acetylene Gas and Oil
ATWOOD MFG. CO.,
Amesbury, Mass.

Big Four Route TO St. Louis

"The Way of the World"

For information as to rates, hotels and boarding houses, address nearest Big Four Agent, or

WARREN J. LYNCH,
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THE GOODMAN COMPANY,
94-95-96 Tribune Building, New York.

Enclosed find $2.00 for which enter my subscription to

The Motor World

for one year, commencing with the issue of _____

Name _____

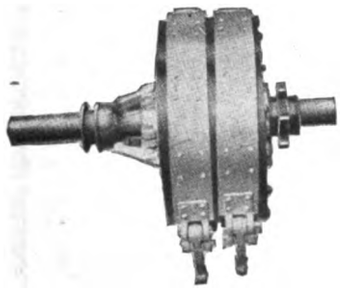
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INDIVIDUAL CLUTCH.
Two Speeds and Reverse.

OUR SPECIALTY.

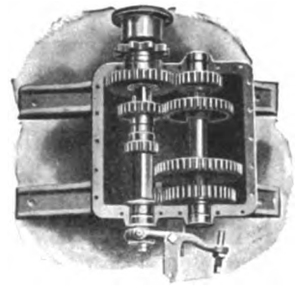
SLIDE GEAR.
Direct Drive, Three Speeds and Reverse.



Transmission Gears

We have been manufacturing these gears for the large trade for three years, consequently in buying them you buy no experiments. Our prices are interesting. Write us.

SYRACUSE GEAR CO., - Syracuse, N. Y.



Kingston Carburetor.

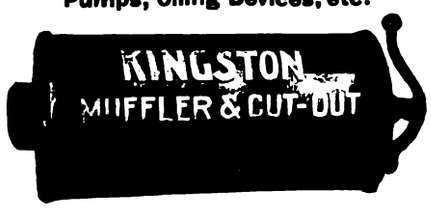
OVER 24,000 IN USE.

Patented May 12, 1903.
Other Patents Pending.



KINGSTON

Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

Pat. Jan. 29, 1901.



An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
THE ADAMS COMPANY, Dubuque, Iowa.

DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 28 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

GRAY AND DAVIS

"Makers of Smart Automobile Lamps."

Be Sure YOUR CAR is Equipped With Them. AMESBURY, MASS.



THE MANUFACTURERS FOUNDRY CO., Waterbury, Ct.
WILL EXHIBIT SAMPLES OF VARIOUS TYPES OF
CYLINDER AND OTHER CASTINGS
WHICH THEY ARE PRODUCING FOR THE AUTOMOBILE TRADE
At MADISON SQUARE GARDEN, New York City, JANUARY 14th to 21st, 1905
CONCERT HALL—SECTION C.



STRONG AND SERVICEABLE.

Strength is needed in Automobile Rims in order to give satisfactory service. STANDARD RIMS excel in strength—hence are serviceable. They are just the Rims you need.

THE STANDARD WELDING CO., Cleveland.

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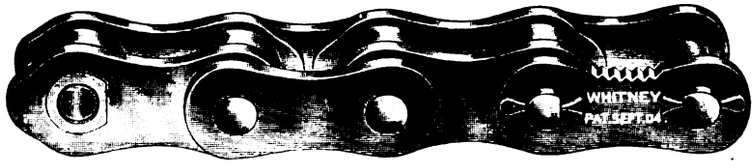
These are **"WHITNEY" STANDARDS** for Roller Chains.

PITCH.	Diameter of Roll.
1 in.	5/8 in.
1 1/4 in.	3/4 in.
1 1/2 in.	7/8 in.
1 3/4 in.	1 in.
2 in.	1 1/8 in.

The PITCH SIZES and DIAMETERS advance uniformly in perfect proportion.

They have broken all records for efficiency, and have been adopted for most of the leading American Cars, including

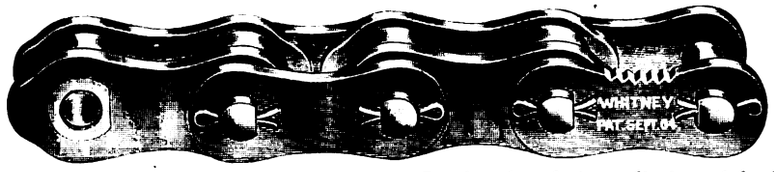
"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "BRAMWELL" "CADILLAC" "COLUMBIA" "CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN" "GROUT" "GAETH" "GIBBS" HARTFORD MOTOR STREET SWEEPER" "KNOX" "LENAWEE" "MITCHELL" "MOLINE" "MATHESON" "MANHATTAN" "OLDS" "POPE-HARTFORD" "PIERCE-RACINE" "PRESCOTT" "QUEEN" "RAMBLER" "STEARNS" "SOMMER" "SNELL" "THOMAS 50 & 60 H. P." "TOURIST" "WAYNE" "WESTERN ELECTRIC"



"Whitney" Roller Chain

RIVETED TYPE.

All links on both sides are Riveted, with exception of one Connecting Link shown.



"Whitney" Roller Chain

COTTER DETACHABLE TYPE.

All links on one side are Riveted and all links on opposite side are Detachable. One link only is considered the Connecting Link, this being distinguished from the others by notches in the top surface.

PITCH.	Diameter of Roll.
1 in.	9-16 in.
1 1/4 in.	5/8 in.
1 1/2 in.	3/4 in.
1 3/4 in.	1 in.
2 in	1 1/8 in.

These are the OLD or COMPETING Standards.

The PITCH SIZES advance uniformly, but the DIAMETERS are irregular and not in perfect proportion.

All Chain Manufacturers have adopted "WHITNEY" Standards for these new sizes 1 3/4 in. and 2 in. pitch.

THE WHITNEY MFG. CO.

Hartford, Conn.

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State salary expected. Address B-2, care The Automobile. 3-10

WANTED.—1904 Oldsmobile in exchange for large standard make touring car. Write for particulars, stating condition of your car. Dr. C. S. Morsman, Peru, Ill. 10

"Straws tell which way the wind blows."

ADVERTISEMENTS LIKE THE ABOVE SHOW THE TRUE VALUE OF THE

OLDSMOBILE

This Ad. appeared a short time ago in one of the motor papers, and is especially interesting, because Dr. Morsman drove a 1902 Oldsmobile many thousand miles, and exchanged it in 1903 for a larger car. He writes us that he is now going back to the Oldsmobile for the following reasons:—

"Your car represents the maximum of road efficiency, economy in operating expenses, including repairs, simplicity of construction, insuring least amount of care, and ease of control."

His trouble with the large car was excessive wear and tear due to complication of parts and weights, increased operating expenses, and impossibility of a lady successfully operating a large machine.

We all like variety, we like to have some experience with all automobiles, but the Oldsmobile owner, if he ever takes up another type of machine, usually retains his Oldsmobile or buys another one at no very distant date. In the light car line, our machines are typical motor cars, and from $650 to $1400 we can supply a car which will surely suit not only your requirements, but your pocketbook. To our old users the word Oldsmobile spells not only economy, but utility and reliability. The quickest way to discover the truth of our assertions is to own one of our cars. Here is our complete line. Can we not send you a catalogue and full information?

Oldsmobile Standard Runabout,	**$650**	**Oldsmobile Touring Car, - -**	**$1400**
Oldsmobile Touring Runabout, -	**$750**	**Oldsmobile Light Delivery Car, -**	**$1000**
Oldsmobile Light Tonneau, -	**$950**	**Oldsmobile Heavy Delivery Car, -**	**$2000**

We have left a few of the booklets, "The Rolling Peanut," by George Ade, and "Goop Talk." Copies free.

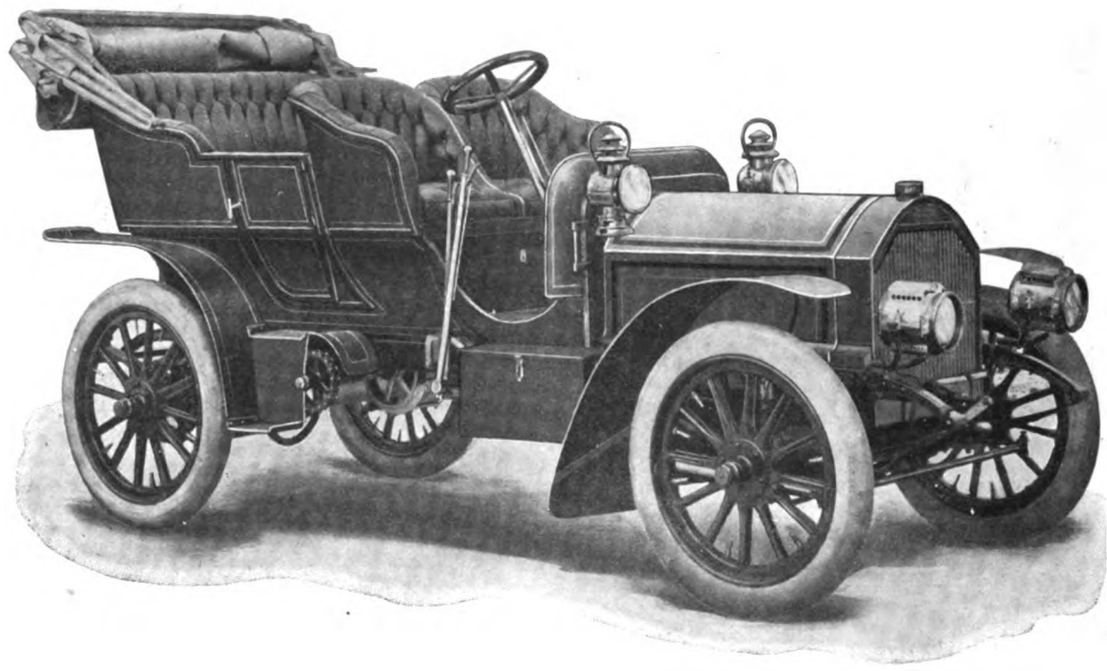
OLDS MOTOR WORKS,

DETROIT, U. S. A.

Member Association of Licensed Automobile Manufacturers.

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APPERSON



24 H. P.–5 Passenger Touring Car.

The most comfortable car in touring over American roads, the greatest speed for the rated horse power, and the best hill climber in the country.

Our Four Cylinder Cars thoroughly tested during the past two years.

You are taking no chances in buying an **experimental** car from us.

Each order, practically an individual car, made for each individual customer.

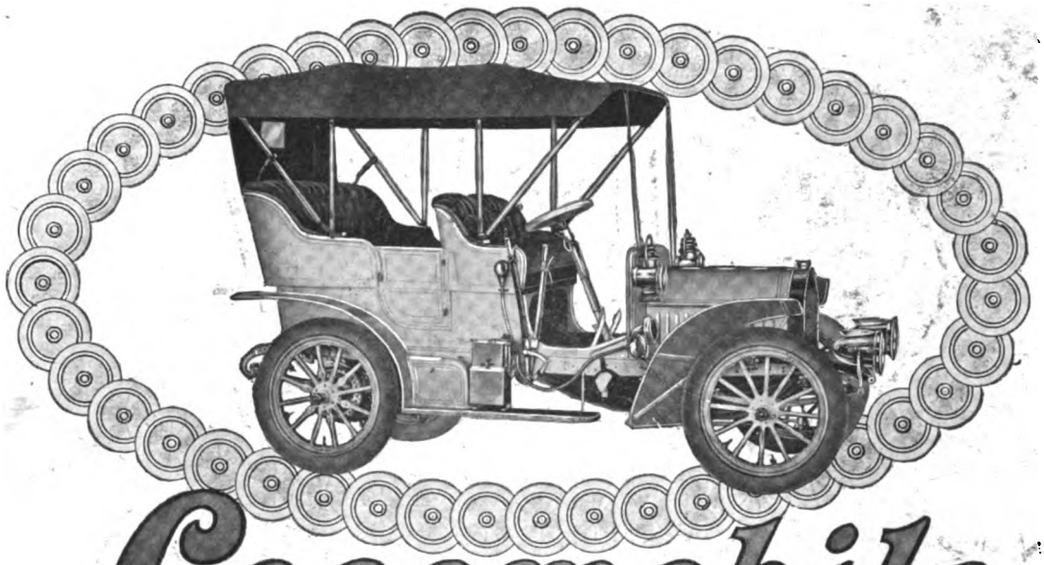
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APPERSON BROS. AUTOMOBILE CO., Kokomo, Ind.

Branches: 394 Wabash Avenue, Chicago; 66 W. 43d Street, New York; 43 Columbus Avenue, Boston;

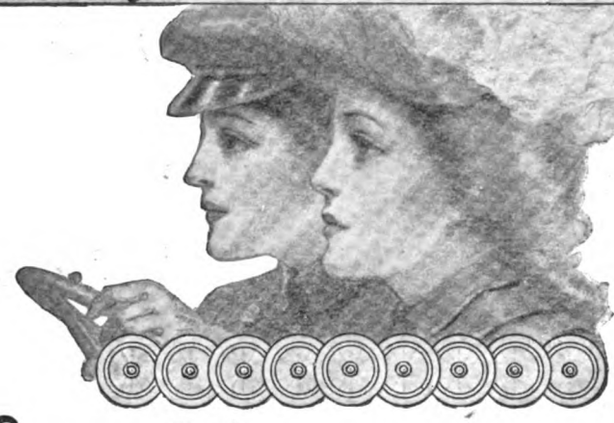
Members Association of Licensed Automobile Manufacturers.

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Locomobile

"Easily the Best Built Car in America"



Locomobile Gasolene Cars

are not near as good as foreign cars, **but a Great Deal Better.**
We can furnish reasons—our cars will prove them.

1905 MODELS. ALL 4-CYLINDER CARS.

15-20 H. P. Price, $2,800
Weight, 1,800 lbs. Make-and-break ignition. Pressed steel frame. Side entrance tonneau.

20-25 H.P. Price, $3,700
Weight, 2,300 lbs. Jump spark ignition. Channel steel frame. Side entrance tonneau.

30-35 H. P. Price, $5,000
Weight, 2,500 lbs. Make-and-break ignition. Pressed steel frame. Side entrance tonneau.

40-45 H. P. Price, $7,500
Weight, 2,800 lbs. Make-and-break ignition. Pressed steel frame. Side entrance tonneau.

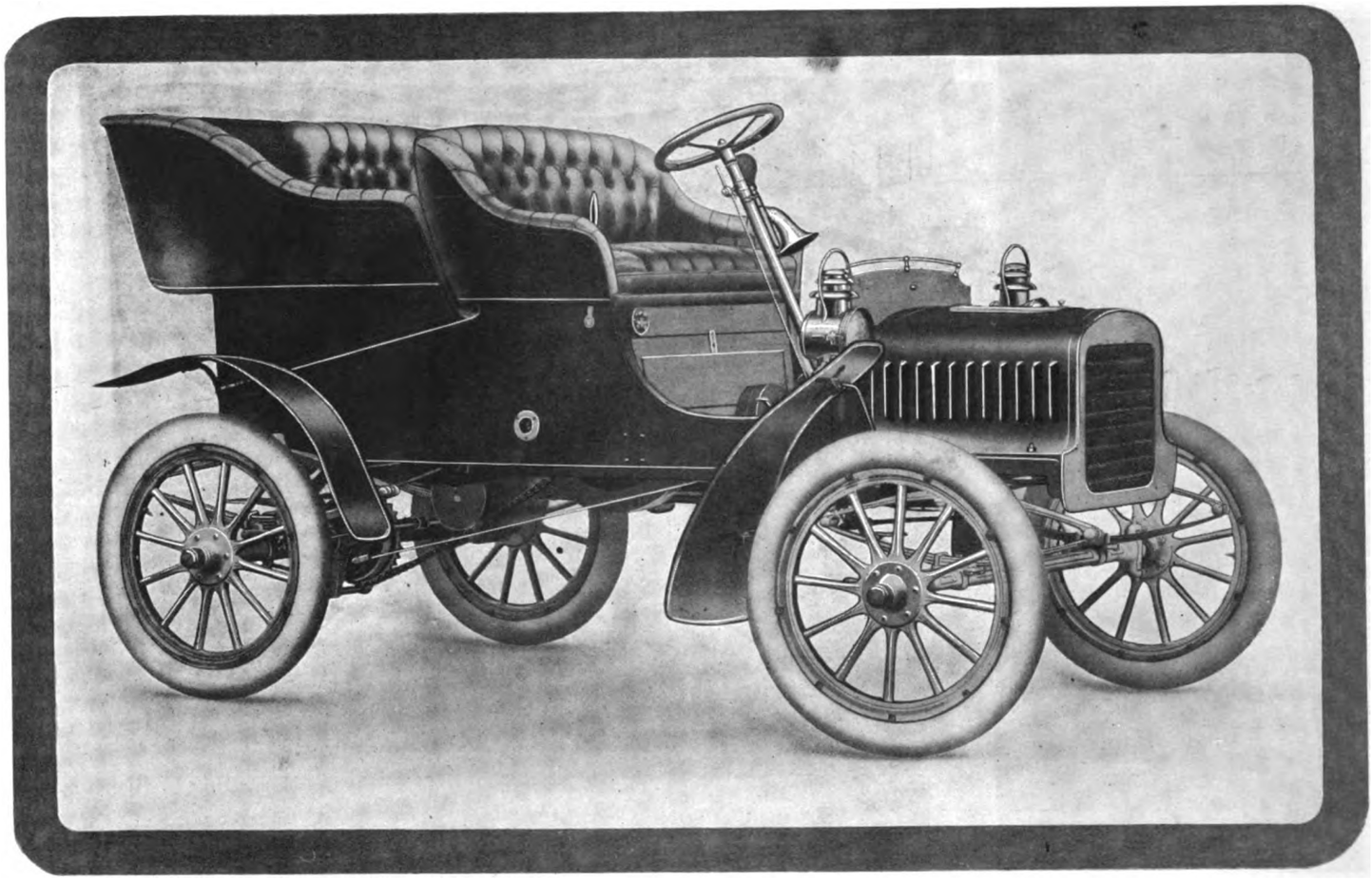
THE Locomobile COMPANY OF AMERICA, BRIDGEPORT, CONN.

New York, Broadway and 76th St.
Philadelphia, 249 N. Broad St.

Member Association of Licensed Automobile Manufacturers.

Boston, 15 Berkeley St.
Chicago, 1354 Michigan Ave.

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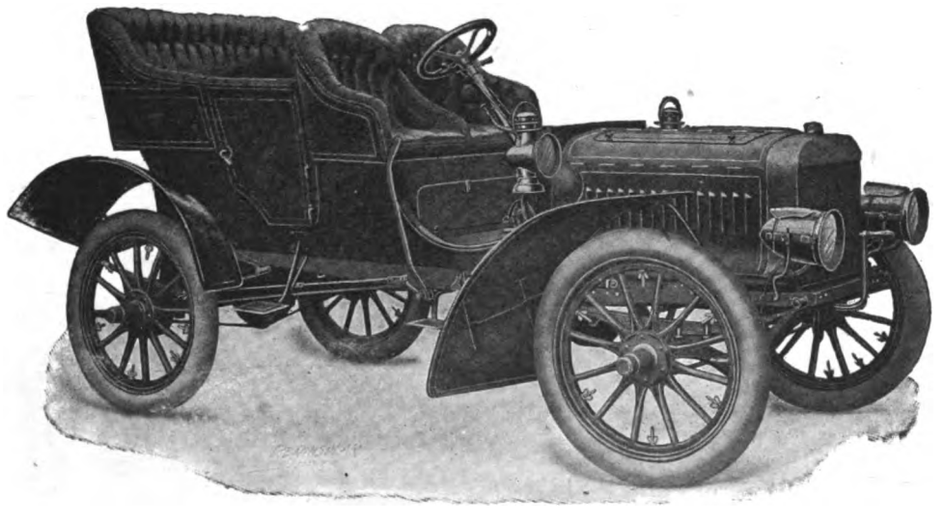


FORD MODEL C. PRICE $950.00

Don't Experiment—
Just Experiment.

Send for detailed description of

Model "C"	Tonneau Car, 1250 lbs., 2 cylinder opposed, price	$950.00
Model "F"	Side Entrance Tonneau, weight 1400 lbs., 2 cylinder opposed, price	$1200.00
Model "B"	4 cylinder, vertical, weight 1700 lbs., side entrance tonneau, price	$2000.00
Delivery Car,	weight 1350 lbs., 2 cylinder opposed, price	$950.00



FORD MODEL B. PRICE $2000.00.

Full particulars about agencies sent on request.

Ford Motor Company,

DETROIT, MICH.

Canadian trade supplied by **The Ford Motor Co. of Canada, Ltd.,** Walkerville, Ontario.

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POPE AUTOMOBILES

THE NAME
BESPEAKS THE QUALITY.

POPE-TOLEDO GASOLINE CARS.

20 H. P. side entrance.....$2800
30 H. P. front entrance.....$3200
Prompt delivery.
30 H. P. side entrance.....$3500
45 H. P. side entrance.....$6000

POPE-WAVERLEY ELECTRICS.

15 Models, $850 to $2250.

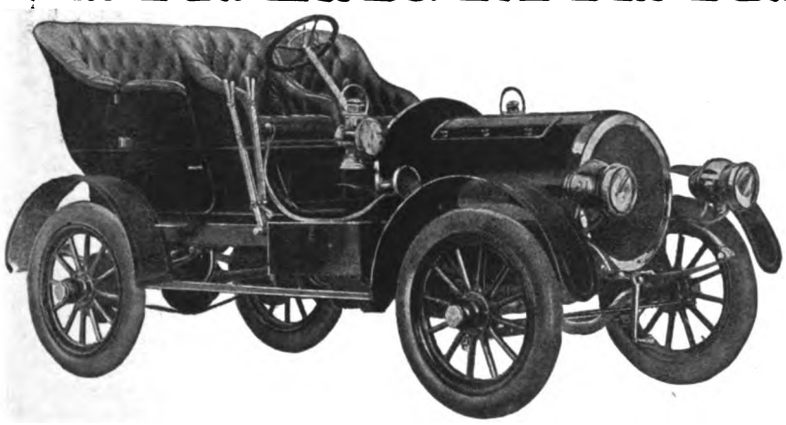
POPE-HARTFORD AND POPE-TRIBUNE GASOLINE CARS.

6 to 16 H. P., $500 to $1600.

POPE MOTOR CAR CO.,
Toledo, Ohio. Indianapolis, Ind.

POPE MFG CO.,
Hartford, Conn.

M. A. L. A. M.



NATIONAL, MODEL C, PRICE, $2,500.

NATIONAL

Model "C"

"GOES THE ROUTE."

With NATIONALS You Lead—Others Follow.

Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
Five lamps, Generator and horn.
Tires, 34 x 4. Positive oiling.
Luxuriously upholstered in leather.
Governor. Duplex throttle control.
Four cylinder 4¼ x 5 vertical.
Bevel gear drive.

Double ball bearing slide gear transmission—direct on high.
Hardened steel gears.
Gear driven commutator.
Rear wheels revolve on double ball bearings on outside axle tube.
All weight taken off inner axle and differential.
Spherical drive case.
Internal expanding metal to metal brakes.
Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905.

National Motor Vehicle Co.,

1007 E. Twenty-Second St., Indianapolis, Ind.

WRITE NOW.



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"The Maxwell"

There is not one complicated detail throughout "Maxwell" construction. The number of parts has been cut down to a minimum, and each part has been treated as a special problem and carefully worked out to perfection. It is fundamentally a car easy to explain, easy to understand and easy to operate.

The owner of a "Maxwell" is absolutely sure of two things.

First, that no car in the market AT ANY PRICE is more reliable than his, and, second, that he owns the one car before the public to-day in which, through its rare simplicity of construction, there is nothing to do but ride.

The "MAXWELL" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and accessible in every part. They have Bevel Gear Drive. METAL BODIES. Transmission Case and Crank Shaft cast in one Aluminum casting. "Perfectly simple and simply perfect."

16 H. P. TOURING CAR, $1400. 8 H. P. TOURABOUT, $750.

MAXWELL-BRISCOE MOTOR CO.
TARRYTOWN, N. Y.
New York City Salesroom, 317 W. 59th Street.

Two Impulses with Every Revolution

This is the famous Elmore Pathfinder, which has demonstrated beyond a doubt the superiority of the two-cycle engine over the four-cycle engine. The most significant feature of the American Automobile situation to-day is the complete triumph of this impulse-every-revolution idea, or, with two cylinders, two impulses every revolution, as exemplified in the Elmore. That the Elmore does produce a constant torque; that it does utilize every particle of power and put a stop to waste energy; that it will take the steepest hill or roughest road at high speed, and that it has the most reliable self-starting engine in the world—for each and every one of these claims overwhelming proof has been produced.

The whole trend of expert and popular opinion is rapidly being directed toward the two-cycle engine.

You owe it to yourself to see this car, which will astonish you, not only by its fine appearance, but by its excess power and its extraordinary control on the high speed.

Send for our full line of literature, the booklet illustrating the 6,000-mile trip, our catalogue, explanation of our engine, and the opinions of people who have used our cars, all sent free, or, if you wish, we will send a 10x12 photograph of the Pathnder on receipt of 10 cents in stamps.

ELMORE MANUFACTURING COMPANY,

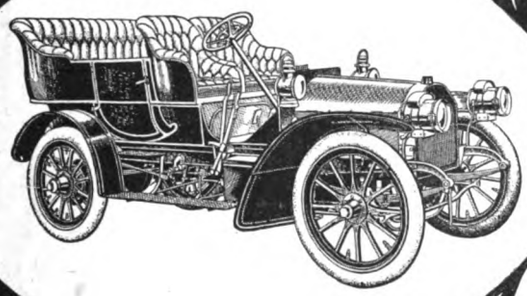
1104 Amanda Street, CLYDE, OHIO.

Members of Association of Licensed Automobile Manufacturers.

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Peerless

The Car of Achievement



Peerless Motors

have valves on top of cylinder instead of on the sides as other motors.

RESULT IS

a smaller combustion chamber—explosive force is directed principally on top of cylinder head—no force is wasted on offset posts. Hence there is greater motor efficiency.

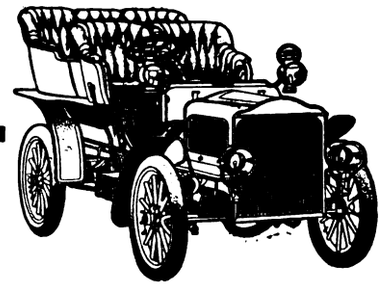
1905 PRICES

24 H.P.	30 H.P.	35 H.P.	60 H.P.
$3,200	$3,750	$4.000	$6,000

Send for Catalogue now ready.

PEERLESS MOTOR CAR CO.
CLEVELAND, OHIO.
Member A. L. A. M.

L. S. & M. B. Co. CLEV'D.



PERFORMANCES

OF THE

15 H.P. WHITE

(Stripped and provided with Wind Shield),

At ORMOND, FLA.

Time Trial

1 Mile, - 53 Seconds
1 Kilometer, 32 4-5 "

Class B Races

851—1432 Lbs.

First in One Mile Race

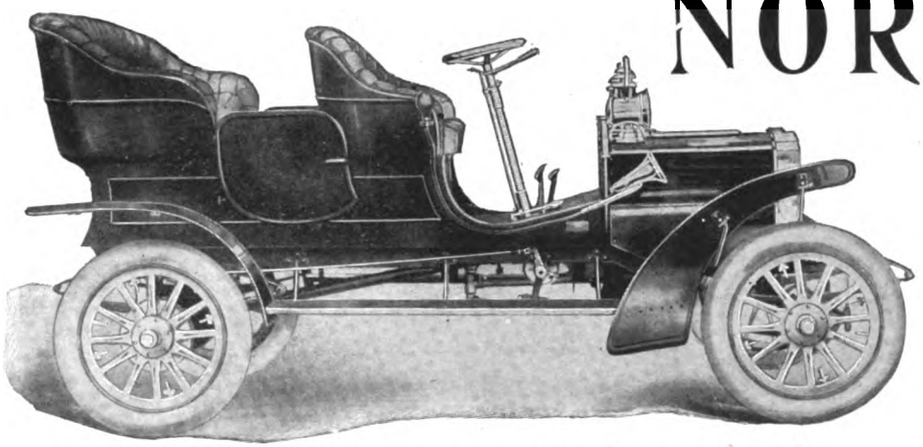
Time, 51 4-5 Seconds.

First in One Kilometer Race

WHITE SEWING MACHINE COMPANY,
CLEVELAND, OHIO.

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NORTHERN



Five-passenger, Side Entrance Northern Touring Car, 18 h. p., 100 inch wheel base, Price, $1700.

The chief reason that automobile tires wear out, is that automobile manufacturers do not furnish tires large enough for the machines.

Undersized tires cannot be expected to last.

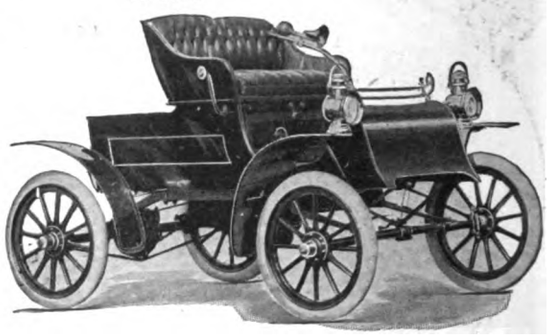
They do not last, because they are not selected with proper regard to weight, speed and power of the car.

The Northern is the only Touring Car at the price equipped with 4-inch tires.

Every other part of the **Northern** is equipped in the same generous way. This has much to do with **Northern** success.

Write for new catalogue 16.

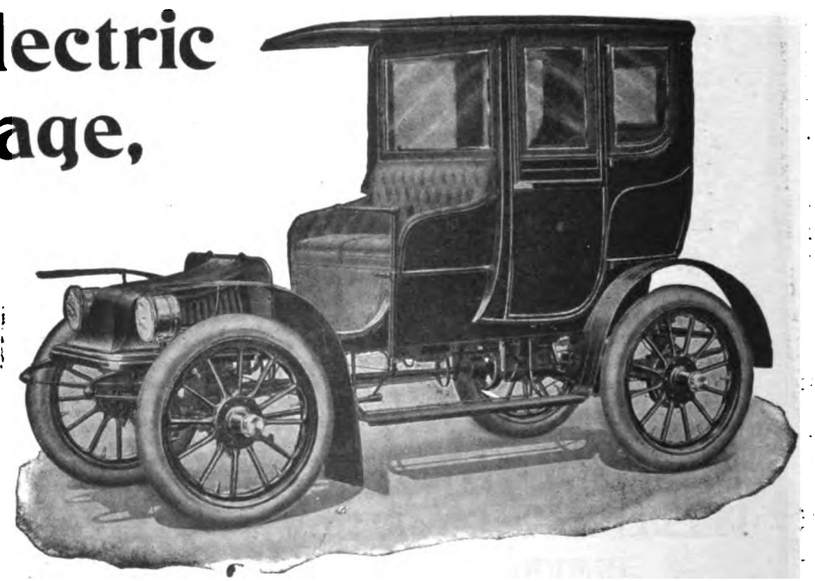
NORTHERN MANUFACTURING COMPANY,
Detroit, Mich., U. S. A.
Member A.L.A.M.



Sturdy Northern Runabout, $650.

THE BAKER ELECTRIC

The Baker Electric Depot Carriage,



The Most Elegant of all Electrics.

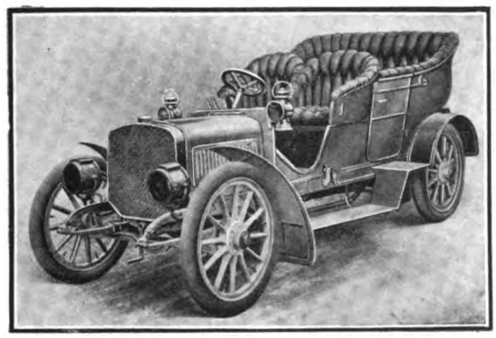
ALSO,

RUNABOUTS, STANHOPES, SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.

THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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THE LOZIER MOTOR CAR—30-35 H. P.

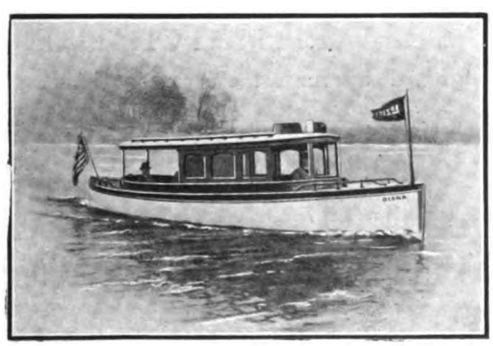
LOZIER

MOTOR
CARS
MARINE
MOTORS
AND
MOTOR
BOATS
ARE
HIGH
GRADE
ONLY

A separate Catalogue for each of our Products Write for the one you want

THE LOZIER MOTOR CO.,
Suite 9, 1 Broadway,
New York

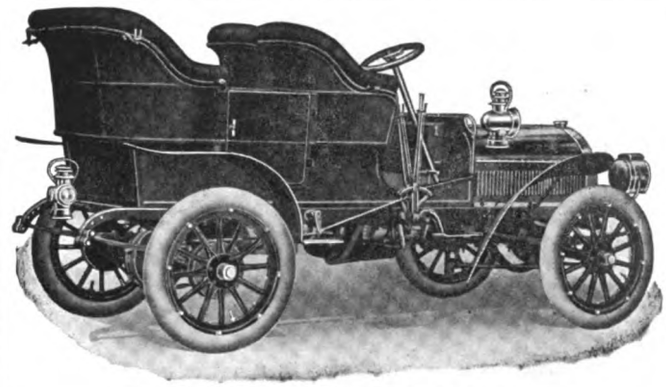
LOZIER



A LOZIER 31-FOOT CABIN CRUISER.

STEVENS-DURYEA GASOLINE AUTOMOBILES.

OUR LATEST PRODUCT,
THE NEW TOURING CAR,
MODEL "R."
FOUR CYLINDER—TWENTY HORSEPOWER



SALIENT FEATURES.

Aluminum Body,
Side Entrance Tonneau,
Pressed Steel Frame,
Three Speeds and Reverse,
Three Brakes,
Four Individual Cylinders,
Bevel Gear Drive,
Water Cooling,
Standard Equipment,
Weight, 1650 lbs.
Great Strength—High Power—Light Weight.

PRICE, $2500.00.

Send for beautifully illustrated 32-page booklet, containing full details of both Models "L" and "R."

AGENTS—
Write for special proposition on unoccupied territory.
It will surely interest you.

AGENTS—
You know what our famous Runabout Model "L" has accomplished. Ascertain the claims we make for our *Touring Car.*

J. STEVENS ARMS & TOOL COMPANY,

690 Main Street,
CHICOPEE FALLS, MASS., U. S. A.

Members Association Licensed Automobile Manufacturers.

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1905 ANNOUNCEMENT

The Autocar

A NEW TYPE.

We believe that the Autocar in all its types represents the highest excellence in automobile design, workmanship and material. Every Autocar is built on honor. We feel, therefore, that our new type will meet with a cordial reception.

This car, **Type XI.**, larger and more powerful than the other types, has a four-cylinder vertical engine of 16-20 horsepower. The body is built on the newest and most approved French lines. The front seat is divided and both front and rear seats are large and comfortable.

While this car is built upon the tried Autocar principles which have been so splendidly proven, it shows a number of very important improvements making for increased simplicity, ease of operation, safety and comfort.

In fact, though Autocars have always been noted for absence of bewildering intricacy of mechanism, yet no one can but be impressed with the extreme simplicity of this new car. It is a triumph in scientific construction and arrangement.

This car has more than met our highest expectations in the road test. In fact, its performance has been a surprise to experienced automobile men. The power of the car carries it, fully equipped and loaded with five passengers up, tested 12 per cent. grades, for instance, at 20 to 25 miles per hour on the direct drive, while on the level the car attains a speed of 40 to 45 miles. The car is a superior climber on any hill.

Altogether our eight years' experience has enabled us to produce in this type, a four cylinder car we are assured cannot be surpassed by any similar car at any price.

The price of Type XI is $2000. Ready for delivery January 16.

Type VIII.—Four-Passenger at ($1400.) and

Type X.—Runabout at ($900.)

have made *Autocar Reputation*. Each stands at the head of its class for value and efficiency.

Catalogue descriptive or the 1904-05 types will be sent free upon request. This catalogue contains also addresses of our dealers throughout the country who will be glad to give demonstrations to prospective automobile purchasers and explain in detail the merits of our cars.

THE AUTOCAR COMPANY,

Ardmore, Pa.

Member Association of Licensed Automobile Manufacturers.

236

Automobiles were exhibited at the Chicago Automobile Show.

30

were equipped with Solid Tires.

22 OF THE 30

were equipped with

FIRESTONE SIDE-WIRE TIRES.

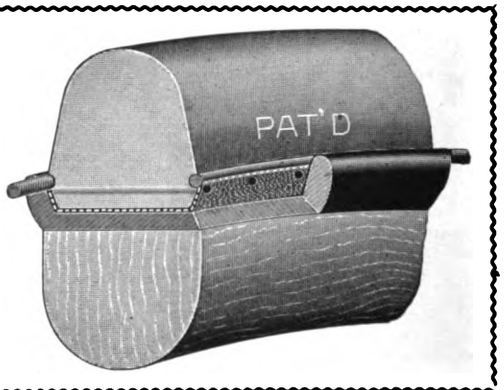
16 OF THE 30

were pleasure cars.

These statistics show the rapid growth into popularity of

SOLID TIRES

for pleasure as well as Commercial Automobiles.



These statistics like those of the New York show demonstrate conclusively that the

FIRESTONE SIDE-WIRE MOTOR TIRE

is recognized by manufacturers as the best Solid Tire.

Its use will save you MONEY, TIME and ANNOYANCE.

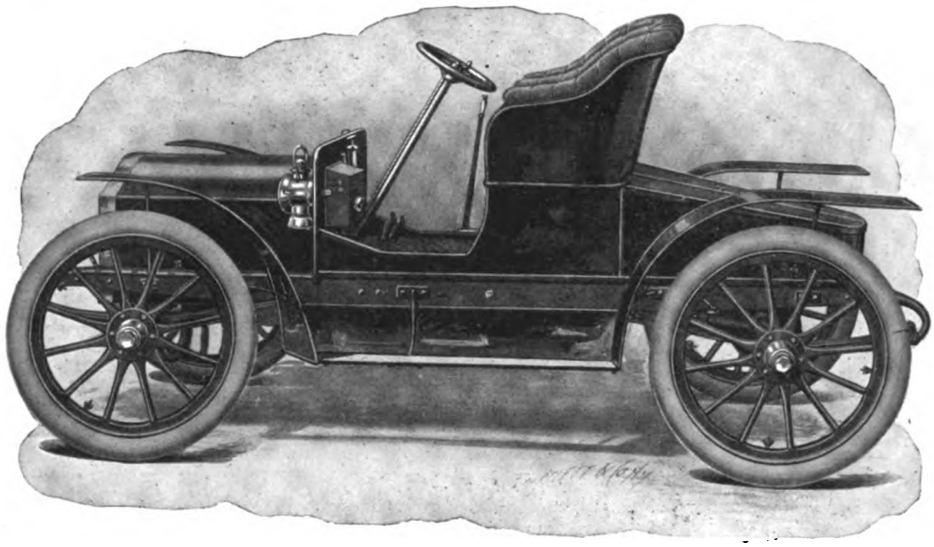
WRITE FOR PARTICULARS.

FIRESTONE TIRE & RUBBER COMPANY,

AKRON, OHIO.

New York, Boston, Philadelphia, Chicago, St. Louis, San Francisco.

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TOURING RUNABOUT, with Semi-Racing Body, 16 H.P., Price $1500.

A SEMI-RACER.

This car is a beauty. A 16 H. P. Touring Runabout, it is designed on the sweetest lines, with semi-racing body. The motor is the Positive Air-cooled Orient, a 4-cylinder, vertical fore-and-aft, with special flange system, and direct air-blast from a powerful four-bladed fan. The cylinders of this motor run uniformly cool under all conditions of weather and climate, and the car will make 40 miles an hour over ordinary roads.

Same Car—with Detachable Tonneau.

We have arranged to put out this same model with detachable tonneau, thus providing an ideal car for business and professional men who want to use a Runabout most of the time, but need the tonneau for family use on Sundays and in the evenings.

The price of Model E without tonneau is $1500—with tonneau, $1650.

It is one of the strongest features in the Orient line. Full details and catalogue if you wish.

ORIENT TOURING CARS.

Model E, Touring Runabout (semi-racing body), 16 H.-P..	$1500
Model E, with detachable Tonneau, 16 H. P.	1650
Model F, Light Touring Car, with Tonneau, 16 H.-P.	1650
Model G, Touring Car, 20 H.-P.	2000
Model de Luxe, Touring Car, 20 H.-P.	2250

BUCKBOARD LINE.

Buckboard, Model A, 4 H.-P.	$375
Surrey, Model B, 4 H.-P.	450
Runabout, Model C, 4 H.-P.	475
Tonneau, Model D, 4 H.-P.	525

WALTHAM MANUFACTURING COMPANY,

Members of Association of Licensed Automobile Manufacturers.

Factory: WALTHAM, MASS. **General Sales Offices: 44 BROAD ST., NEW YORK.**

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MORGAN & WRIGHT INNER TUBES

are used (in many cases are *demanded*) by users of *all* brands of auto tires.

They are *recognized* as the most satisfactory—because the most serviceable—tubes made.

We manufacture an immense quantity of them in addition to those used in M. & W. tires.

They are called for by dealers. repairmen and users *everywhere.*

☞They have saved many a bad tire from *going* to the bad.

A WORD TO THE WISE.

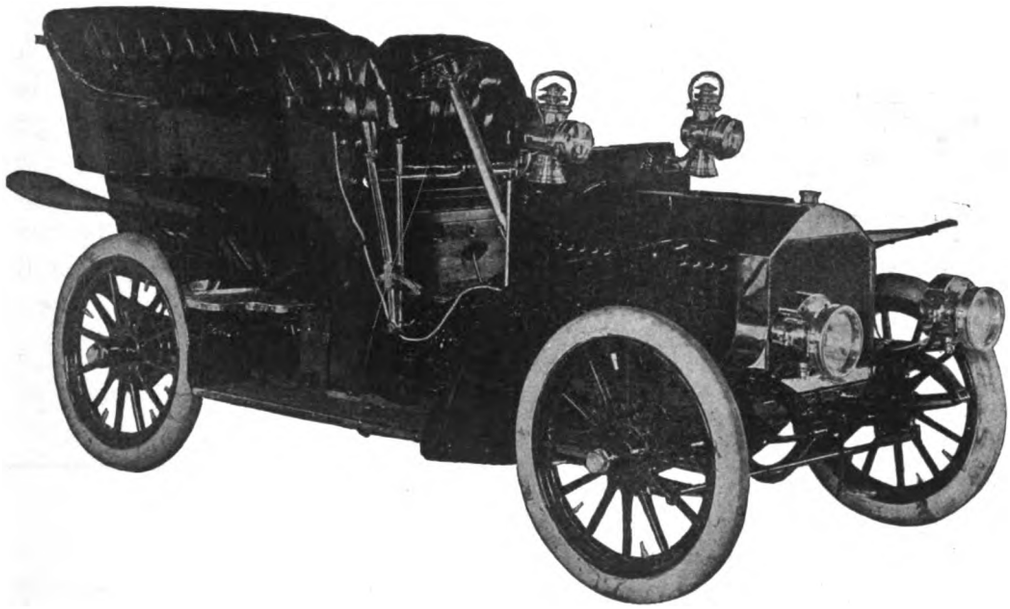
MORGAN & WRIGHT, CHICAGO.

NEW YORK, DAYTON, DETROIT, ATLANTA, ST. LOUIS, SAN FRANCISCO.

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"CLEVELAND."

TO THOSE WHO KNOW, THE NAME BESPEAKS THE QUALITY.



18-20 H.P.
Four Cylinder Vertical Engine.

Price $2800.
Complete with Standard Equipment.

Silent, Smooth, and Reliable in its Running Qualities.

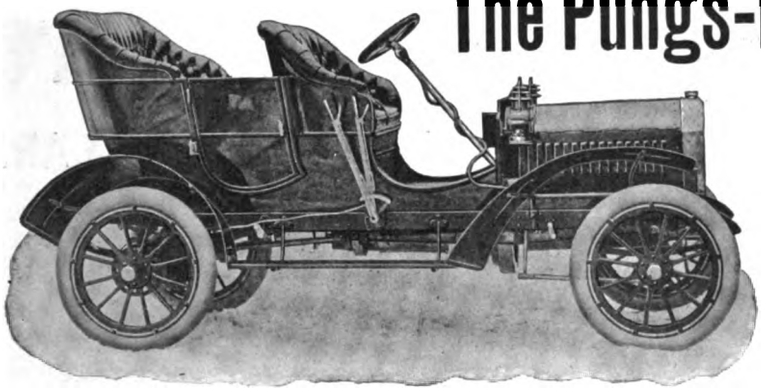
Well made in every detail.

In appearance, "that something indefinable called 'style'" is apparent at a glance.

If interested in a **Good** Automobile, the "Cleveland" will interest **You.**

CLEVELAND MOTOR CAR CO., - - Cleveland, O.

The Pungs-Finch 4 Cylinder Touring Car



MODEL F.

Motor—Four cylinders, 20 H. P.
Sliding Gear speed change.
Three forward speeds and reverse.
Bevel Gear transmission to divided rear axle.
Wheel Base, Model D. 80 inches.
Model F. 97 inches.
Tires, Model D. 30 x 3½.
Model F. 32 x 3½.
Weight, Model D. 1,750 lbs.
Model F. 1,825 lbs.
Side or rear entrance tonneau, seats four or five passengers.

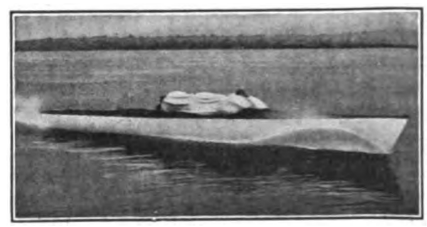
PRICE:—

Rear Entrance Tonneau, Model D. $1,700.
Side Entrance Tonneau, Model F. $1,850.

EXPERIENCE: Fifteen years ago the Sintz Engine Company built a practical and successful automobile that covered thousands of miles and was ten years in advance of the times. Constant study and years full of valuable, practical experience in the building of thousands of Gas Engines, are the secret of our ability to produce a reliable Touring Car for $1,700.

Send for full description of this up-to-date car.

We build Practical, High-Speed Auto Boats and Yachts, Marine Gasoline Engines, both two and four-cycle—one to four-cylinder, from 2½ to 100 H. P. Fifteen years' experience. Send 10c. for large Marine Catalogue.

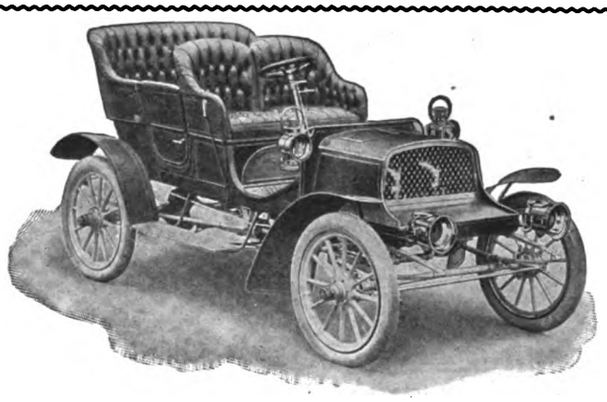


PUNGS-FINCH CO., Detroit, Mich.

Successors to { SINTZ GAS ENGINE CO. / MICHIGAN YACHT & POWER CO.

New York Representative, DUERR-WARD & CO. *Chicago Representative, WILSON MOTOR CO.*

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PREMIER

4 Cylinder. Air-Cooled.

The Natural Evolution of Mechanical Skill Guided by Practical Experience.

"THE QUALITY CAR."

Side Entrance,	1905 Model F,	-	$1,500
Rear Entrance,	1905 Model F,	-	$1,400
Runabout,	1905 Model F,	-	$1,250

Simplicity and accessibility were the two points which warranted the general expression, "No wonder it's practical," from all visitors at the New York and Chicago Shows. Write for Descriptive Catalogue.

PREMIER MOTOR MFG. CO., 1003 Georgia Street, Indianapolis, Ind.

In Emergencies it is absolutely necessary that the operator of a car have **one hand, both feet** and his **head** free to meet the conditions.

The **DUQUESNE** Touring Car "steers like a "runabout"—use only the left hand on the wheel. Our ball bearing **irreversible** steering gear acts instantly and positively. All levers for changing speed, throttle and spark control are on the steering post in instant reach of the free hand. Break levers, one at each foot.

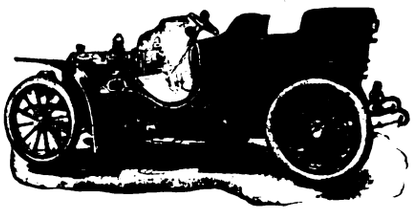
No Quadrants to watch—nothing to take your eyes off the road ahead.

You know the price—

"Half of Thirty-Five."

DUQUESNE CONSTRUCTION COMPANY,

Manufacturers, **Jamestown, N. Y.**



THE AMERICAN MERCEDES IS READY.

Let us show you the first complete replica of a foreign car America has ever produced. 40—45 h p.; Price **$7500.**

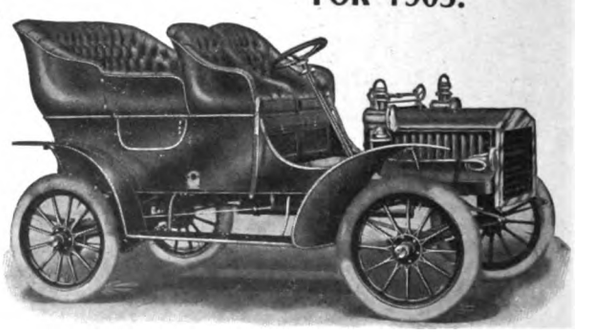
DAIMLER MFG. CO.,

955 Steinway Avenue, - LONG ISLAND CITY, N. Y.

Booklet for the asking.

THE MICHIGAN

LIGHT TOURING CARS FOR 1905.



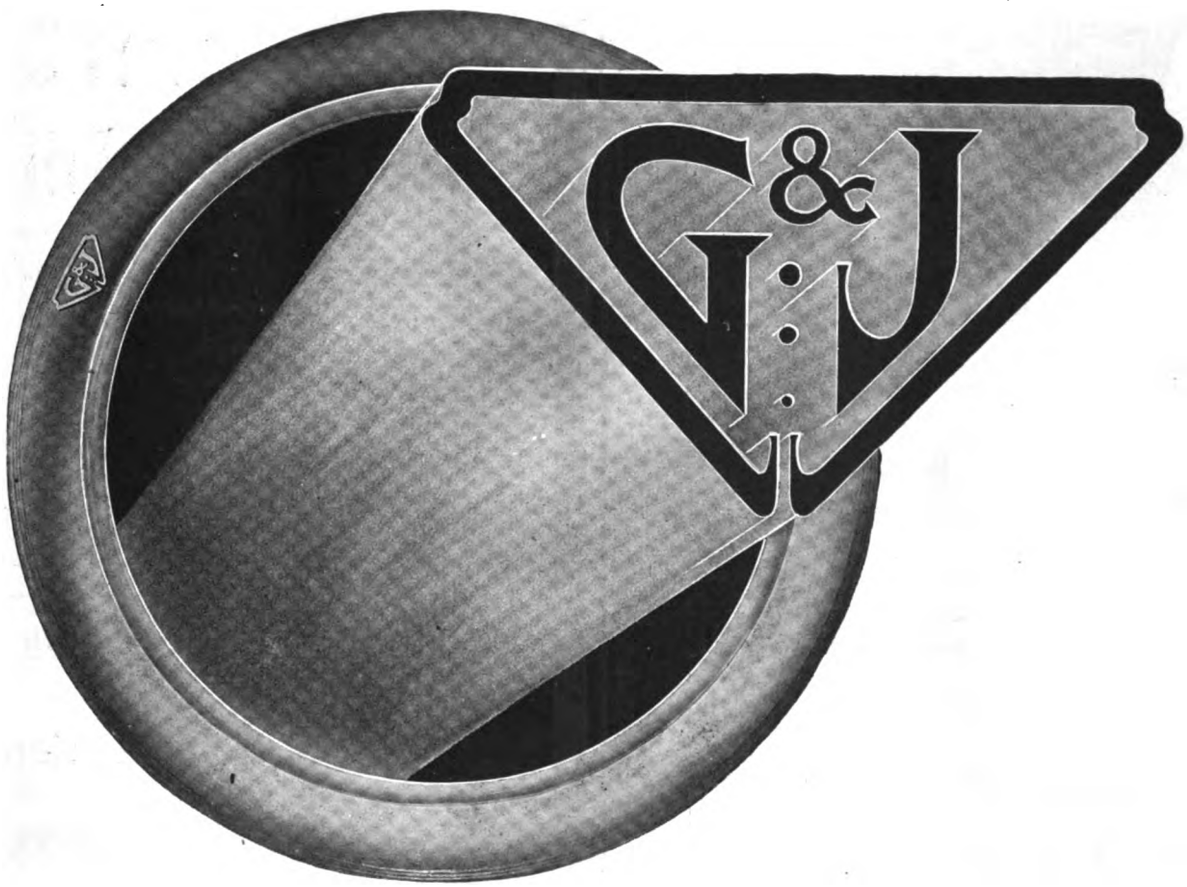
MODEL E, $1250. CARRIES 5 PERSONS.

The Michigan cars are not a brand "new" product—all untried and unknown, like many a "1905" car. Even the best designers are often at fault in their estimates of strength of materials, and some great names in the auto business have produced some very unsatisfactory machines. We have made no revolutionary changes in our 1904 cars—a *few* changes have been made, and those only where we where *sure* of making improvement. Guess work has spoilt many a machine and ruined many a man. Buy a tried and tested car.

ASK FOR CATALOG AND AGENTS' TERMS.

MICHIGAN AUTOMOBILE CO., Ltd., Kalamazoo, Mich.

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The G & J Thread Fabric Tire is so flexible that it is extremely easy to handle. It can be removed from the rim and replaced in less time than any other tire.

No lugs are used. The flap in the tire makes them unnecessary.

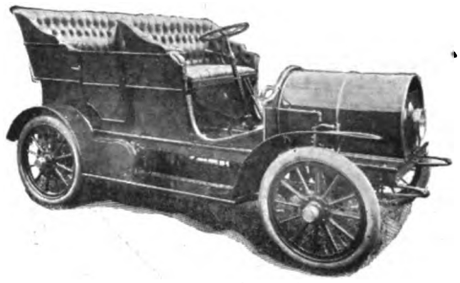
The G & J Thread Tire embodies in the highest degree, resiliency, durability, ease of handling.

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Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded

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No Noise. No Vibration. Will not Freeze in Zero Weather. Climb Any Hill. Speedy, Reliable. Simple in Operation.

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THAT CAR **Logan** OF QUALITY.

COMMERCIAL TRUCK

ONE TON Carrying Capacity.

One H.P. for each 100 lbs. of load.

Service-Ability Large.

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Any driver of a horse drawn vehicle can do it.

ANY STYLE BODY DESIRED.

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Chillicothe, Ohio.

Packard Motor Cars

"Ask The Man who owns one"

Packard Motor Car Co.
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OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This new edition of this handsomely bound and artistically printed book, containing illustrations of about 125 gasolene cars, will be ready for mailing about Feb. 1st, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

The 1904 edition is now out of print.

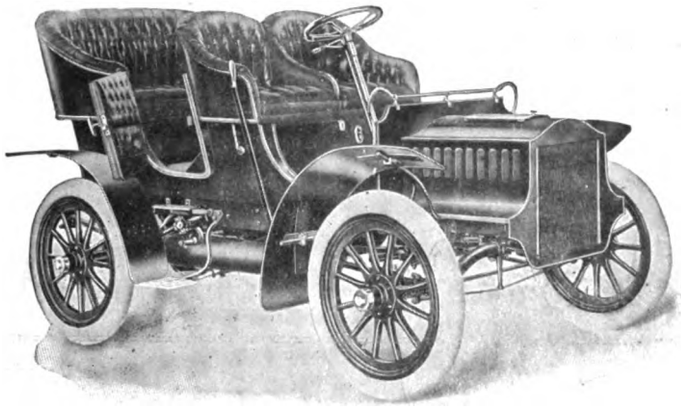
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Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

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is delivered to the road wheels of our 1905 cars than ever before.

Our popular priced models possess all the essential features of the most expensive touring cars. They are splendid hill climbers—are capable of taking four people anywhere that wheels will go—as fast as ordinary roads will permit.

For the man who wants a "big" car we have brought out our new four-cylinder, 30-horse power motor, planetary three speed transmission, operated by *one* lever; shaft drive. Side entrance body, of wood or aluminum, and, like all our former models, it is, in every way, more car

THAN YOU PAY FOR

—more power, more speed, more reliability, more comfort, more general excellence—far more. We want you to know more about our cars for this year. Send for Catalogue.

Cadillac Automobile Company, - - Detroit, Mich.

Member Association of Licensed Automobile Manufacturers.

GOODRICH Tires

Ordinary **men** pass muster until confronted with emergencies, and ordinary **tires** look good enough when brand new, but should be tagged: "Tender and not very true."

Goodrich Tires are Extraordinary Tires

Fit all roads. Require little care or attention, and cost less (mileage considered) than any other Tire.

Send for booklet "The Goodrich Road" and also for "Certificates of Merit."

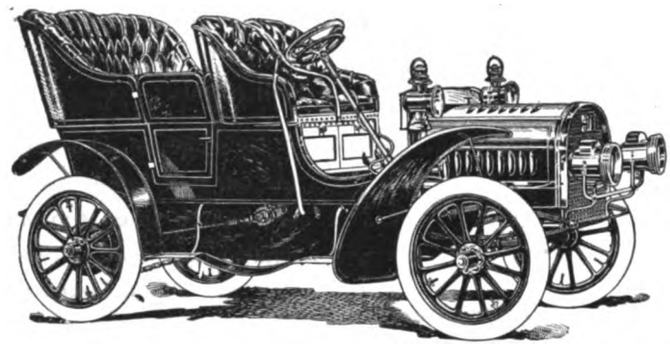
THE B. F. GOODRICH COMPANY, - - - Akron, O.

NEW YORK, 66-68 Reade St. and 1625 Broadway.
SAN FRANCISCO, 392 Mission St. PHILADELPHIA, 909 Arch St.
CHICAGO, 141 Lake St. CLEVELAND, 420 Superior St.
DETROIT, 80 E. Congress St. BUFFALO, 9 W. Huron St.
BOSTON, 161 Columbus Ave. DENVER, 1444 Curtis St.
LONDON, E. C., 7 Snow Hill.

TRADE G MARK

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Rambler



SURREY, TYPE ONE.

$1350.

18 H.P. Immediate Delivery.

This vehicle has no superior for general use. It is a fine car sold at a low price, because of the exceptional facilities of the largest automobile plant in the world. This vehicle combines beauty, speed and reliability.

The RAMBLER engine is so powerful in comparison with the weight of the car that it is seldom necessary to use the low speed. When running on high speed, the power is transmitted direct to the wheels without the mediation of gears and with absolutely no frictional loss. Vibration is almost entirely eliminated by the engine being rigidly braced, and the reciprocating parts exactly balancing each other.

OTHER MODELS, $750, $850, $2000, $3000.

Send for THE RAMBLER MAGAZINE and learn from the voluntary contributions of users how satisfactory their experiences have been.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin.

New York Agency, 134 West 38th Street.

BRANCHES.

BOSTON, 145 Columbus Avenue. CHICAGO, 302-304 Wabash Avenue. PHILADELPHIA, 242 North Broad Street.

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, February 23, 1905. No. 22

GET YOUR MONEY FIRST

If You Permit Use of Repaired Car, You Forfeit Your Lien, Says the Court.

Justice Clark, sitting in Trial Term, Part II, of the New York Supreme Court, has rendered a decision in the case of Smith vs. O'Brien, of interest to repairers and garage owners not alone in New York State, but throughout the country wherever the common law has not been changed by special statute. As the question involved is a new one, created principally by the automobile itself, it is extremely doubtful if any legislation on this point has been enacted.

The Smith in the case, or the plaintiff, is of the firm of Smith & Mabley, who sued one O'Brien for a storage bill and for the enforcement of their common law lien on the latter's car for which the bill for services was incurred. The keeper of a garage, or bailee, as he is technically termed in the law, is entitled to his common law lien for services which attaches to the bailor's property so long as the latter remains in his possession, but, according to the decision in question, loss of control over it, even temporarily, as in the present case, where the owner was permitted to use the automobile on which repairs have been made before the bill is paid, causes the garage owner to lose his lien.

The judge further states in his opinion that without a statute in favor of garage owners they will have no lien for storage or repairs after the car for which the charge of repairs is due has left the garage, no matter for how short a space of time.

Coliseum Bound Up by Contract.

It is going the rounds that the independent manufacturers have secured an option on the Coliseum, Chicago, and will turn the tables on the Licensed Association of Automobile Manufacturers by denying its members space at the 1906 show in that city.

This makes it appear that it is not to be generally known that a three years' option on the Coliseum Building is held by Samuel A. Miles, who, before or after becoming manager of the National Association of Automobile Manufacturers, entered into a contract with that body to hold all shows under its sanction. As this contract does not expire until after the 1906 exhibition, it is manifest that the rumors that the independents have secured the Coliseum lacks substance.

Railroads Advance Freight Rates.

An advance in the classification of the freight of automobiles has recently been announced by the freight departments of Eastern roads.

As far as Chicago the second class rate is based on a 65 per cent. rate from New York, and the first class rate on a basisof 75 cents. Automobiles have been averaged at 5,000 pounds in weight, which means under the new classification an increase of $5 in freight charges from any point east of Chicago. The rate further west, however, remains the same.

Licensed Makers Discuss Show.

At their regular meeting yesterday in their New York offices, the Association of Licensed Automobile Manufacturers devoted a great deal of discussion to the show subject, but evolved nothing for publication.

"The show is a big subject," replied General Manager Day when pressed for information, "and its affairs cannot be settled at one meeting, or at several. It necessarily will form a subject of discussion at many of our meetings before anything is ripe for publication."

Fire Destroys Spark Coil Factory.

Fire of unknown origin on Sunday morning last, 19th inst., totally destroyed the plant of the Pittsfield Spark Coil Co., Pittsfield, Mass. The loss is estimated at $42,000. The insurance was but $12,000. The directors of the company immediately held a meeting and hope to effect such arrangements as will make delays in deliveries merely nominal.

To Handle Diamonds in the South.

The Diamond Rubber Co. will open a new branch in Atlanta, Ga., about March 1. The building, No. 94 North Pryor street, is being remodelled for the company's occupancy, and a salesroom and repair station will be established, in charge of a thoroughly experienced force.

ST. LOUIS MYSTERY DEEPENS

Mister Steinmeyer, Gentleman and Contractor, Explodes with Wrath at Mention of it.

St. Louis, Mo., Feb. 18.—The million-dollar automobile factory, which is supposed to be building at Kirkwood, St. Louis County, is still very much a mystery. After several attempts, a Motor World man yesterday obtained access to A. L. Steinmeyer, of the Peyton Investment Company, who is credited with the promotion of the big project.

When Steinmeyer was informed of the purpose of the visit, he appeared startled; when he learned that his visitor represented the Motor World, he exploded.

The Motor World is the only publication which said anything about the project, and the fact seems to have jarred Mister Steinmeyer's nerves. For some reason or the other, he denounced the paper roundly, and heatedly declared that he would give it no information whatsoever. He also found it necessary to emphatically assert that he considered himself a gentleman, and appeared to fancy that he had been grossly insulted by being referred to in the Motor World's story as plain "Steinmeyer," without the prefix "Mister."

Between explosions Mister Steinmeyer let fall, however, a few grains of information. He stated that he is not only a gentleman, but a real estate man and a contractor, and that, as such, he was out to make money; that he had sold the ground for the factory, and had the contract for the erection of the necessary buildings. He absolutely declined, however, to give the name of any of his associates, or the name of the company that will occupy the plant after it is completed.

He said that the man who knew all about the car that is to be built in New York, but he (Mister Steinmeyer) refused to give his name or address, or any inkling concerning him. He said also that nothing ever would have been known of the project but for the action of a St. Louis paper in publishing some information concerning it, despite his earnest pleadings that the matter be suppressed. In fact, whatever Mister Steinmeyer said was said so vociferously and

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vehemently that it seemed as if the other occupants in the building in which his office is located might have been justified in sending in a police call.

It will be recalled that the only information concerning the million-dollar factory that has leaked out makes it appear that the structure is to be of three stories, 300 by 300 feet, and that the plans also include the erection of 140 cottages for the workmen.

Kirkwood, which is to be the site of Mister Steinmeyer's factory, is a residence suburb about thirteen miles west of St. Louis. There are at present no factories there, but only groceries, meat shops and such other stores as are required for the necessities of suburban life. It is also a prohibition town, the saloon question having been for years the leading one in all municipal elections.

Hanlon Itching to "Do Things."

St. Louis (Mo.) automobilists, or at any rate Eugene Hanlon, of St. Louis, are wroth, and because they, or he, cannot have an automobile show this year. According to the garbled reports that come from St. Louis, it seems that Hanlon went to Chicago to get the sanction of the National Association of Automobile Manufacturers for the affair, and was unsuccessful. The board stated that, inasmuch as there was an automobile show in progress all last summer at the St. Louis World's Fair, the Mound citizens ought to be satisfied and give other cities a chance.

Mr. Hanlon thinks St. Louis needs a show, a series of races or "something" to stimulate the local trade. There are at present only eight hundred cars in St. Louis, which means that only eight persons out of every seven thousand own automobiles. Hanlon has dreamed that in most of the Eastern cities one person out of every two hundred possesses a car, and therefore, like a good citizen, who, of course, don't care a rap about gate receipts, etc., he wants to see St. Louis higher up on the list.

Duerr Adds Queen to his Line.

C. E. Duerr & Co., New York, have taken on the Queen, made by the C. H. Blomstrom Motor Co., of Detroit, Mich., and, with the Royal Tourist and the Pungs-Finch, another Detroit product, which is new with them this year, are now in a position to show cars ranging from $800 to $4,000. "The Queen is simply a wonder for its price," said one of C. E. Duerr's men to a Motor World representative. "We've tried it on 'Duffy's Hill,' anad it went up in a manner befitting its name. Why, just think of it, a light touring car with 5x5 cylinders."

Davis Goes to the Coast.

Charles Davis, who formerly travelled Ohio and Michigan for the G & J Tire Co., has been transferred to San Francisco, and will henceforth cover California in the interests of the "original clincher." Davis has a reputation for energy and geniality, and it would seem that he cannot fail to do well.

The Week's Incorporations.

New York, N. Y.—Christie Direct Action Motor Car Co., under New York laws, with $300,000 capital. Incorporators: C. G. Christie, D. H. Haywood and N. T. M. Melliss.

New Haven, Conn.—The New Haven Automobile Corporation, under Connecticut laws, with $3,000 capital. Incorporators: Herbert E. Doolittle, Robert R. Doolittle and Sarah S. Handy.

Cincinnati, Ohio—American Auto Car Co., under Ohio laws, with $200,000 capital. Incorporators: M. M. Robertson, A. J. Smith, N. L. Emerson, W. F. Hanna and E. T. Horstman.

Hartford, Conn.—The Capital City Automobile Hack & Livery Co., under Connecticut laws, with $9,000 capital. Incorporators: Wilbur Tewksbury, William F. Dahill and John L. Carroll.

Jersey City, N. J.—The Commercial Electric Vehicle Co., under New Jersey laws, with $1,000,000 capital; to operate vehicles, etc. Incorporators: Dwight W. Bowles, Thomas P. Ford and Frank P. Slade.

Chicago, Ill.—Monarch Metal Co., under Illinois laws, with $2,500 capital, to manufacture and repair automobiles. Incorporators: Godfrey Johnson, Charles C. Stilwell and C. C. Bowersock.

Boston, Mass.—Biograph Automobile Sign Co., uider Massachusetts laws, with $40,000 capital, to deal in advertising devices. Officers: Richard S. Barrett, Melrose, and Chas. C. Corbett, treasurer.

Detroit, Mich.—The Massnick Mfg. Co., under Michigan laws, with $7,000 capital, to manufacture machinery, tools, automobile parts, etc. Incorporators: Fred C. Massnick, Paul F. Kellogg and William J. Sparks.

In the Retail World.

George Blaisdell has taken the Rockford, Ill., agency for the Cadillac cars.

At Michigan City, Ind., Brinckman Bros. are establishing a garage and automobile livery.

Guy R. Mathis, Springfield, Ill., will act as agent in Sangamon County for the Winton and Cadillac.

The White steam cars will be handled at Buffalo by Walter Hayes, who secured the agency last week.

The Western Automobile Co., No. 1,409 Michigan avenue, Chicago, Ill., has taken the Western agency for the Maxwell cars.

The Maxwell-Briscoe Co. will be represented in Boston by Ralph E. Coburn, who has taken the agency for the Maxwell cars.

Benjamin Smith has taken the Boston, Mass., agency for the Studebaker cars, and will open headquarters on Columbus avenue.

The Greer Motor Car Co., No. 1,421 Michigan avenue, Chicago, Ill., will handle the Michigan and St. Louis cars in Chicago this year.

Humboldt County, Cal., is the territory to be covered by Healy Bros., Eureka, Cal. They have taken the agency for the Olds and Winton cars.

The store at No. 163 Columbus avenue, Boston, Mass., is being remodelled for J. M. Linscott, who will handle the National and Reo cars this year.

William Galloway, of Waterloo, Iowa, has taken the agency in that city for the Cadillac car, and will establish quarters in the Equitable Building. He will also carry a full stock of accessories and conduct a garage.

A. R. Bangs, Boston agent for the Baker electrics, has opened his new salesroom, at No. 801 Boylston street. Harry W. Doherty will manage the new salesroom, and Bangs will continue in charge of the garage on Brimmer street.

Articles of incorporation will probably be filed by the recently organized Minneapolis Automobile Dealers' Association. A committee has been appointed to consider the advisability of incorporation, and will report at the meeting next Tuesday, February 28.

J. J. Barclay, a Minneapolis (Minn.) dealer wants to erect a new garage, but as yet is at a loss to know just where to build. Barclay had planned locating on Sixth avenue, between Second and Third avenues, but H. S. Haynes, of the Haynes Automobile Co., stole a march on him and secured the lease of the ground first.

W. C. Doddridge, former president of the Missouri Pacific Railroad, and W. Duncan will incorporate the Missouri Valley Motor Co., Kansas City, early in the spring. The company will conduct a general livery and sale business in automobiles, and will be capitalized at $50,000. The business will be managed by a son of Mr. Doddridge.

The Standard Automobile Co., of New York City, has leased for a period of twenty-one years the plot, 75x185 feet, on the north side of Fifty-fifth street, just west of Broadway, together with a lot 25 feet wide extending to Broadway. The company will erect a building to be used as an automobile salesroom and garage. The aggregate net rental under the lease amounts to about $250,000.

Big Fire in London.

Cables from London, under date of Wednesday, the 22d inst., state that the centre of the district given over to the automobile business was swept by fire on that day, resulting in the loss of hundreds of new cars just returned from the Olympia show, which closed on Monday. The damage is estimated at $1,250,000. The extent of the conflagration may be imagined from the fact that it was necessary to call out no less than forty-eight engines.

Wagon Company's First Car.

The Harrison Wagon Co., Grand Rapids, Mich., will make its debut in the automobile building world on March 1, when its first car will be ready for the market.

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SCARING AWAY BUSINESS

How Too-Industrious Insurance Agents Ply Their Trade to Detriment of Dealers.

"One of the drawbacks to the automobile dealers are the fire and life insurance agents who work on a commission basis," said a New Jersey dealer who was in New York this week to the Motor World man. "The insurance men have knocked several 'sure' sales sky high for me, and I naturally do not feel in a very peaceful frame of mind over it. But what are we agents to do?

"The insurance sharks employ underhand methods to further their designs. No doubt they think they are acting with good intent, but they play havoc with us just the same. For instance, an insurance agent with lots of time to spare will hang around a garage until a prosperous looking individual comes in to inquire about a machine. Then when I take the prospective buyer out for a trial spin the insurance man will bribe one of my employes—which is an easy thing to do if the latter knows—to tell him the name of my prospective customer. If this method fails to give him the desired information he waits until we come back from the demonstration, and as soon as the man leaves the garage the overzealous insurance agent nabs him. My man had probably just about agreed to take a car when the agent solicits him to take out some insurance.

" 'But what do I want with insurance?' the former demands.

" 'Oh, didn't you promise Mr. So-and-So (meaning me) to buy an automobile?' queries the agent.

" 'Well, yes, I did; but what has that got to do with insurance?'

" 'They all take it out,' says the slick, oily tongued insurance man. 'You need fire insurance for your automobile and accident insurance to indemnify you in case you kill or maim yourself or somebody on the street and get stuck on a damage suit.'

"And in many cases," added the dealer, "my prospective customer later sends me a polite little note, saying that he has decided not to get an automobile, as there is so much extra expense attached thereto and he has already purchased a span of horses. So I lose a sale.

"If somebody will suggest a way to get ahead of the insurance agents I will be thankful, as I have lost several good sales in just the manner I have described. They simply scare trade away."

"Butted in" to Winton's Factory.

Workmen in the polishing department of the Winton Motor Carriage Co., at Cleveland, Ohio, thought the end of the world had surely come one day last week, and some of the more pious workmen began to mumble long forgotten prayers, while others executed a series of rapid leaps for the doors. The cause of the commotion was a coal car of the Lake Shore Railroad. The train crew were switching cars around the yards of the Winton company, when of a sudden the switch engine gave one of the cars a "kick" which sent it speeding down the track parallel with the polishing shop. Striking an obstruction on the rails, it jumped the track, and, turning partially around, rammed through the foot-thick brick wall of the automobile factory and did not stop until half its length was inside. The damage is estimated at $1,000.

Second-Hands Affecting City Trade.

"Bad weather naturally accounts for any dulness that may be felt in the New York trade just at the present moment," said Percy Owen, manager of the Winton branch, to a Motor World man. "Of course, no one wants to go out in a foot of snow or over a frozen road that resembles a washboard, but, in my opinion, that's not the one and only reason. I believe the bulk of the city business will be unusually late this year, and this is to be accounted for almost entirely by the fact that so many people are now possessors of second hand cars. Until they can get rid of them they will not buy, and that's all there is to it.

"Did you notice that fellow just a moment ago," referring to a caller; "that was his proposition—wanted his last year's car taken in trade. It's a wonder to me that more people don't go into the business of handling second hand cars, for there certainly should be plenty of money in it. They could, no doubt, make good, and a few large houses of this kind would relieve the pressure, because it is certainly the problem to-day."

Thomas Buys More Land.

The E. R. Thomas Motor Co., of Buffalo, has purchased a hundred feet of ground on Niagara street, adjoining factory No. 1, and plans are being prepared to enlarge that plant as soon as the frost is out of the ground. Incidentally, the one hundred and tenth car of the 1905 model was shipped to New Orleans last Saturday. There are 350 more of them to be manufactured.

Denver Show in April.

The first automobile show to be held west of Chicago is scheduled for the first week in April at Coliseum Hall, Denver, Col. G. A. Wahlgreen, who is also promoting the Pikes Peak climb, is the manager.

Coey to Enter Jobbing Field.

C. A. Coey & Co. who handle the Thomas cars in Chicago, are enlarging the supply department of their business, and will actively enter the jobbing trade. They have a catalogue well under way.

Hart Becomes Corbin Officer.

M. S. Hart, of New Britain, Conn., has been elected vice-president and treasurer of the Corbin Motor Vehicle Co., of that city.

RULES FOR CHAUFFEURS

California Organization's Comprehensive Regulations that Should Serve to Good Purpose.

In view of the recent automobile accidents occurring in the Golden Gate Park, San Francisco, Cal., due to inexperienced drivers, the Automobile Club of California now proposes to keep a blacklist of chauffeurs found guilty of careless driving. The California Association of Chauffeurs has more than promised to work in conjunction with the club to this end, having sent the following communication to the automobile club:

"We, the undersigned, hereby petition your association to expel any driver who, on being tried by your examining board, is found guilty of reckless driving, either by excessive speed or improper handling of his machine, thereby endangering the lives of the occupants of the machine or those upon the highways, and we hereby agree not to employ drivers who are expelled from your association for the above causes."

In the bylaws of the association several good clauses are evident:

"Any member of this association found guilty of intoxication while in charge of a machine shall, upon being found guilty, be fined or expelled, as the association may see fit.

"Any member of this association found guilty of dishonesty toward his employer or the association or its members shall be expelled.

"Any member found guilty of using an automobile in a reckless manner, or of being responsible for the injury or destruction of a machine through carelessness shall be fined, suspended or expelled, as the association may see fit.

"Every member of the California Association of Chauffeurs must undergo a strict examination as to the knowledge of the car he is in charge of, and must carry a certificate of qualification, properly signed by the examining board and the president and secretary of the association."

Offering Premiums for Packards.

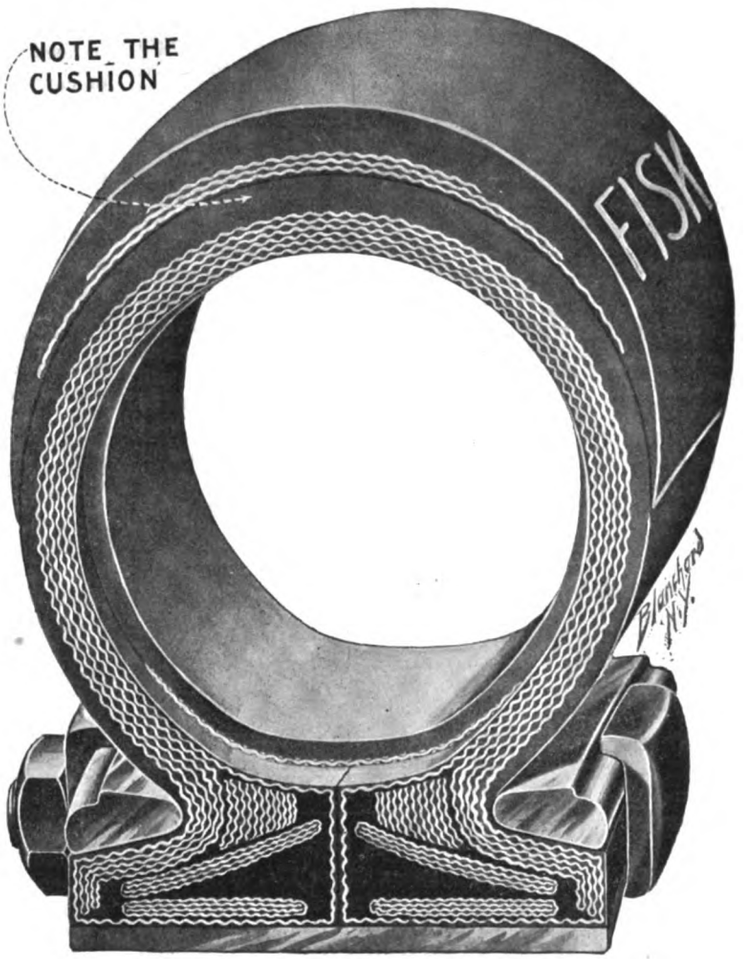
There are a number of Packard agents who now realize that "delays are dangerous." They hesitated to place orders, and as the demand for the Packard cars now exceeds the supply and the factory is "sold up," they are in a pretty pickle. As a way out they have been offering premiums of as much as $400 to secure cars and going to the factory at Detroit to dangle the bait. These facts are vouched for by the Packard people themselves.

Kimball is Coming Back.

E. P. Kimball, of the Central Automobile Exchange, New York, is to re-establish himself, but on the Thirty-eighth street "row." He already has secured the agency for the Corbin car.

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The Only Real Automobile Tire.



NOT MERELY AN ENLARGED BICYCLE TIRE,

but a tire designed, developed and constructed specially for use on automobiles, and supplied with a flat rim (don't overlook that), and a fastening in keeping with the design of the tire. And what is very much to the point, it is a tire and a fastening that have been tried ruthlessly for two years and found not wanting.

If you would know more about it, permit us to mail you a copy of our booklet.

The Fisk Rubber Company, Chicopee Falls, Mass.

BRANCHES: New York, 754-756 Seventh Ave. Chicago, 1251 Michigan Ave.

BOSTON, 226 Columbus Ave.
SPRINGFIELD, 40 Dwight St.
PHILADELPHIA, 828 Arch St.
ATLANTA, 103 N. Pryor St.
SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
DETROIT, 254 Jefferson Ave.
MONTREAL, CANADA
ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
MINNEAPOLIS, 704 Hennepin Ave.
DENVER, 1534 Glenarm St.
SAN FRANCISCO, 114 Second St.
LOS ANGELES, 1034 So. Main St.
LONDON, ENGLAND

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Pocket Picking in New Jersey.

In the riot of automobile legislation that is now more or less convulsing this country, nothing stands out more disgustingly than New Jersey's attempt at legislative pocket-picking.

The doughty Senator Grady, of New York, who would place all automobile accidents without distinction in the category of manslaughter, and the fanatical Brower, of the professional grievance committee of the West End Association, who would not give offending automobilists the option of a fine, are suffering from overheated imaginations, but the New Jersey proposal to alter the present perpetual registration fee of $1 to a tax of $5 per annum is a cold blooded species of robbery.

There is no excuse, and less reason, for it. It is not presented even in the usual guise of "protection to the public." It is merely placing a legislative blunderbuss at the heads of a selected class of New Jersey citizens and those of other States who desire to use the roads of the State—for New Jersey has always mulcted residents and non-residents impartially—and ordering them to throw up their hands while their pockets are being picked of $5 each. It is an indecently contemptible proposal, actuated by the equally contemptible sentiment, "We got $1 so easily, we may as well squeeze $5 out of them."

It was a State official who last summer gave voice to this utterance. It was not accepted seriously at the time. It was not believed that the manhood of New Jersey would permit descent to such methods of the pick-pocket and highwayman, but it is now seen that too high an estimate was placed on at least certain members of the legislature.

There ought to be decency enough in the State of New Jersey to defeat this miserable attempt to wring blood money from certain of its citizens and its visitors. The amount is small; the principle is great.

The Searchlight Evil.

Great credit must certainly be accorded the lamp manufacturers for the state of perfection and efficiency to which they have brought their product in the short time that experiments have been making with acetylene, but the question arises, Has not the mark been overstepped?

And it is one well worthy of consideration, for is not the blinding glare of the now huge searchlights with which heavy touring cars are equipped far more dangerous than the absence of a light? True enough, speed requires that the road been seen for quite a length ahead in order to insure safety, but night speeding over unknown, or over well known roads for that matter, is not a a particularly safe practice under any circumstances.

What is it to become when everything on the road moving in the opposite direction is to be rendered helpless by the sudden flashing of an overpowering glare in the eyes, and left to flounder, blind and bewildered, in midroad during the moments of the car's approach? By actual count many of the powerful cars now carry no less than six lamps, two oil headlights, a tail light ditto, a pair of acetylene headlights of no mean illuminating power, and, to top on all, a hand controlled searchlight that would do credit to a torpedo boat. The last named were to be seen on previous occasions, but their use was not general by any means, and it is not difficult to prophesy that they will be responsible in some measure for accidents during the coming season.

That this is not a theory but a condition, as the Motor World remarked several months since, is well illustrated by the fact that it revealed itself immediately upon the adoption of high powered electric searchlights by the Western railroads, and at first the evil effects of rendering the engineers helpless for the time, and the fact that regardless of its power the light could not be seen around a curve were thought to nullify its advantages. A remedy was found, however, in the use of a deflector which throws a good fraction of the light skyward at a slight angle and the remainder on the ground not too far in advance of the engine. By means of the upper light the approach of a train is visible two or three miles distant, despite intervening cuts or curves, and the small fraction of light—many times that of the old headlight, deflected to the ground, does not bother the engineer of a train in the opposite direction.

The Casting of Cylinders.

It may appear strange at first sight that the idea of casting the four cylinders of the engine in one piece integral with the water-jacket, now being put forward in England as marking a decided advance over "foreign" methods, has not come in for more attention at the hands of designers and builders in this country.

The advantages of accomplishing in one operation what now requires four are obvious, as is also the increased economy resulting from the necessity of handling and finishing but one casting. Saving of space and great reduction in the number of fittings required to fasten the single casting in place, as well as the ease of accurately aligning all the cylinders, constitute items of importance to the builder which also make for simplicity in the finished engine.

The practice in vogue here of casting the cylinders of the usual four-cylinder engine in pairs has obtained to an extent that entitles it to be denominated standard. This was a half-way step toward the one-piece four-cylinder casting, but advances have been made in exactly the opposite direction, in that those who have dropped the twin-cylinder casting have come to make each cylinder of the four entirely independent.

The gain resulting from this in the way of added interchangeability, ease of repair and

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replacement is self-evident, but they are only obtained at a much greater first cost both in manufacture and fitting, as it is much more difficult to align the four independent cylinders on the crank case to which they are bolted as a foundation. As to any difference of efficiency in operation this may well be said to be a mooted question which can only be determined after experience with the one-piece casting. Certain it is that the integral water jacket surrounding all the cylinders, while not open to the evils of leaky joints to the same extent, can scarcely lay claim to greater cooling powers than the independent copper jackets, in spite of slightly additional area. But its permanency of alignment is indisputable. Nor can there be any question as to a slight saving in space as well as absence of vibration due to the lack of necessity for bolting. In addition to this our contemporaries of over the water call attention to the fact that both are prone to go down before the same ills, that freezing will have an equally pernicious effect on either and that it will be equally expensive to replace the one independent cylinder as it would to supply another unit of four.

The question resolves itself into a very simple matter, for the advantages are chiefly in favor of the maker and against the user. And with this in view, it may well be asked will the advantages of economy in production be sufficient to compensate the user for any slight difference in first cost that he may have to pay, for all roseate over-the-water opinions to the contrary notwithstanding the car owner who has to replace the four cylinders, and one means all in this case every time—will find it very much more expensive than if they were independent.

Further, present gas engine design in casting the cylinders independently is held up to ridicule in that it is totally at variance with long established steam engineering practise, but to those who have been instrumental in bringing the automobile motor to its latter day state of efficiency this will have no great weight, as the lesson that the internal combustion motor is a totally different proposition and that steam engine lore, of no matter how many years' standing, doesn't apply to it, was long since well learned.

There is a big season before the automobile manufacturer all over the world, and its practical results will doubtless do much toward settling controversies over the advantages of disputed points in construction, as did the last twelve months, and the method in question is one that will either prove its worth in that time or go down before its superior rivals.

The Second-Hand Problem.

According to the manager of the metropolitan branch of a prominent manufacturer the second-hand car will be responsible for a change in trade conditions, more noticeable this season than ever before. In his opinion, the bulk of city business must be deferred pending the intending purchaser's disposal of his last year's mount, and until this is accomplished satisfactorily buying will hang fire. As none of the manufacturers' agents of branch houses are at all keen about entering this field, in fact, quite the contrary, nor, for that matter, the garage keepers as a general rule, the problem must depend for its ultimate solution on a large increase in the ranks of second hand specialists—dealers who handle nothing else.

That this business can be made lucrative and still be kept legitimate goes without saying, for there is an inbred desire in a very large portion of the race to acquire a bargain at second hand, and it is a trait in human nature that it pays to cater to. Of course, the second hand dealer who publishes glowing descriptions of cars that are not only hopelessly out of date, but have in addition been done to death by their prior owners, has in the past given this aspect of the trade a mighty shady reputation that will naturally be hard to live down. As a matter of fact, a "second hand" demonstration was a performance long a laughing matter with the legitimate trade. If the machine managed to go a block or two, execute a few turns in the roadway in front of the establishment and get back without a break down, that was as far as the seller's guaranty went.

Caveat emptor applies with no uncertain force to all dealings in second hand automobiles, and the buyer usually has no one but himself to blame for being saddled at the outset with a repair bill that is a respectable fraction of the purchase price, and in the end with a cast-off fit only for the junk heap before it reached his hands. But the supply of "suckers" is unfailing, and no one realizes this better than the crafty and not overscrupulous second hand dealer in automobiles. He angles for them accordingly.

There are two classes of cars which find their way into the hands of this gentry—first, those that by some chance have managed to survive dissolution at the hands of utter ignorance and recklessness, and those that have been given careful attention, often not driven for more than a season and are disposed of in favor of a later model. It would seem in the natural order of things that the latter would preponderate, and they are numerous, but, judging from the tales of woe of those who have bitten at the former type, they are not vastly in the minority by any means. But there are enough of the right kind to make legitimate dealing profitable without the necessity of palming off candidates for the scrap heap, and an increase in the number of such dealers will alleviate the burden of the manufacturers' selling forces all over the country. There is room for a few reputable men to increase their reputations and bank accounts in this direction.

Moral of the Boy and his Sled.

If proof is really needed that love of speed is inherent it is embodied in the small boy and his sled.

In city and in country, and whether an aristocratic West Ender or the scion of the humblest farmer, he seeks the steepest, smoothest, longest hill that he may attain swiftest flight and sustain it as long as possible. On the country roads and in the heart of big, bustling New York he is now omnipresent. He cares not a rap for speed laws, and without brake, bell or ability to control his vehicle, and wholly regardless of all forms of travel, he whizzes downhill at the rate of fifteen, twenty, even thirty miles an hour, and, happy lad, with none to say him nay or threaten him with arrest. Like as not his proud sire, if he himself is not steering a bobsled or fracturing the law with a cutter, looks on admiringly.

But the same father as likely shouts himself hoarse at the sight of an easily controlled and quickly stopped automobile moving at half the pace and vociferously calls for law and more of it.

It merely goes to show not merely the unreason of some men, but that, given the vehicle, indulgence in swift motion is wellnigh universal.

Senator Grady has craftily cut some of the ground from under the automobilists' feet by making his bill apply to all forms of vehicles, but when his horsemen friends and the streetcar drivers and truckmen who follow Tammany Hall awaken to the fact that he is putting them in peril of heavy fine and imprisonment for the merest accident there will be "something coming to" the Senator. The truckmen and streetcar drivers cause twenty accidents where the automobile causes one.

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CLEVELAND'S FULL HOUSE

Its Annual Show Crowds the Hall—All the Old Familiars in Evidence.

Cleveland, Ohio, Feb. 21.—It almost goes without saying that the show which opened in the Cleveland Grays' Armory last night was inaugurated auspiciously.

Like Detroit, Cleveland and the adjacent territory possesses so many factories making cars and wares relating thereto, that even without outside assistance, the local trade could promote a show of its own that could not be sniffed at; in fact, the congested appearance of the hall suggests that something of the sort may become necessary if another year brings with it an increased demand for space. The armory really is crowded—too crowded, perhaps, for effective display, but despite the fact the array of cars and sundries in evidence is impressive. Of course, with the exception of two little known cars, there is nothing staged that was not shown at the national show, but most of the large crowd that attended last night was none the wiser. It was all new to them, even if to the exhibitors it was an old story. There is one convenience that the exhibitors enjoy, however, that was lacking at even the big shows. Nearly all of them have telephone service in their booths.

Whites, Wintons, Royals, Peerlesses, Clevelands and Bakers, Cleveland's own productions, are naturally very much in evidence. Even "Standard Oil" is here—the home of "the" Rockefeller. Nearly all of the better known outside cars are displayed, and, almost needless to add, the tire makers, who are following each other like hawks, are on the spot. Solar lamps, Gray & Davis lamps and Twentieth Century lamps and Veeder odometers, without which no Cleveland show could be called complete, are here as in the "days of yore."

Those who are exhibiting are as follows:

Automobile Garage & Repair Co., Cleveland, Ohio—Agents for Packard, Autocar and Cadillac cars.

Booth Automobile Co., W. N., Cleveland, Ohio—Agents for Pope-Hartford and Pope-Tribune cars.

Badger Brass Mfg. Co., Kenosha, Wis.—Solar acetylene gas lamps.

Bowser & Co., S. F., Fort Wayne, Ind.—Gasolene outfits.

Cameron Motor Car Co., Cleveland, Ohio—Cameron cars.

Chisholm & Phillips Automobile Co., Cleveland, Ohio—Agents for Peerless, Knox, Stevens-Duryea, Northern and National cars.

Cleveland Tanning Co., Cleveland, Ohio—Upholstery leather.

Cleveland Motor Car Co., Cleveland, Ohio—Cleveland cars.

Diamond Rubber Co., Akron, Ohio—Diamond detachable clincher tires.

Electric Storage Battery Co., Cleveland, Ohio—Storage Bateries.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk Tires.

Gabriel Horn Co., Cleveland, Ohio—Gabriel horns.

Goodrich Co., B. F., Akron, Ohio—Goodrich detachable clincher tires.

G & J Tire Co., Indianapolis, Ind.—G & J detachable clincher tires.

Gray & Davis, Amesbury, Mass.—Headlight, side and tail oil and acetylene gas lamps.

Gaeth Automobile Works, Cleveland, Ohio—Gaethmobile cars.

Hussey Drop Forge & Mfg. Co., Cleveland, Ohio—Steering gears and wheels, circulating pumps and radiators.

Hartford Rubber Works Co., Hartford, Conn.—Dunlop detachable and Hartford and Turner tires.

Lorain Automobile Co., Lorain, Ohio—Elmore Pathfinder cars.

Morgan & Wright, Inc., Chicago, Ill.—Clincher detachable tires.

Moore, H. S., Cleveland, Ohio—Agent for Queen cars.

Magoon Car Co., C. H., Cleveland, Ohio—Agent for Pope-Toledo gasolene and Pope-Waverly electric cars.

National Carbon Co., Cleveland, Ohio—Columbia ignition apparatus.

Ohio Motor Car Co., Cleveland, Ohio—Agent for Columbia and Buick cars.

Ohio Oldsmobile Co., Cleveland, Ohio—Agent for Olds cars.

Parson Electric Motor Carriage Co., Cleveland, Ohio—Parson car.

Price Bros. Carriage Co., Cleveland, Ohio—Baker electric cars.

Rose Mfg. Co., Philadelphia, Pa.—Neverout gas and oil lamps.

Royal Motor Car Co., Cleveland, Ohio—Royal cars.

Reo Motor Car Co., Lansing, Mich.—Reo cars.

Sprague Umbrella Co., Norwalk, Ohio—Canopies.

Standard Oil Co., Cleveland, Ohio—Gasolene.

Stearns Co., F. B., Cleveland, Ohio—Stearns cars.

Twentieth Century Mfg. Co., New York City—Lamps.

Veeder Mfg. Co., Hartford, Conn.—Veeder odometers, tachometers, etc.

Winton Motor Carriage Co., Cleveland, Ohio—Winton cars.

White Sewing Machine Co., Cleveland, Ohio—White steam cars.

Zorn, W. M., Cleveland, Ohio—Accessories.

The members of the Board of Review, Cleveland, Ohio, are of the opinion that automobiles are worth more than $100, the amount for which most are listed for taxation. Therefore many automobile owners have been notified by the board to personally come and explain why several hundred dollars should not be added to the returns to cover the machines.

CANADA'S INTERESTING TEST

Railway and Farmers Join Forces to Learn Motor Wagon's Value as a "Feeder."

An interesting trial of commercial vehicles has been made to test the posibilities of automobile trucks for collecting and distributing heavy traffic in remote agricultural districts in connection with railways in Yorkshire, Canada, by the North Eastern Railway, in conjunction with the Agricultural Organization Society, on behalf of the Brandeby Dairy and Trading Association. The railroad authorities have established an automobile service between their station at Tollerton and Brandsby, eleven miles distant. The cars run in each direction daily. Each steam truck has a carrying capacity of five tons of freight, and is capable of hauling at least one trailer carrying two and a half tons. On the outward journey the truck carries limestone, provisions, etc., and distributes the same around the various farms in the district. Simultaneously the cars collect any produce that is to be forwarded by rail. By this system not only is transport facilitated, but the farmers in districts distant from the railway are brought into closer contact with the markets, and the service will prove a considerable saving to them in the cost of haulage. If successful, similar services will be inaugurated elsewhere.

Provides a System of Lights.

Among other bills pending in the Connecticut Legislature is one requiring all vehicles without exception to display lights after nightfall. Another one provides that all automobiles in use at night on the public highways shall have a light on each side, that on the right side to show red in front and white from the rear, that on the left to show white in front and red from the rear. Any other vehicle than an automobile is forbidden to arrange lights similarly subject to a fine of $3. For failure to have lights so arranged a fine of $3 may be imposed for the first offence and $5 for each subsequent one.

Wants to Regulate Garages.

In Minneapolis, Minn., the fire chief is of the belief that managers of automobile shops are careless in handling gasolene. He has therefore requested the Council that an ordinance be passed regulating these institutions and giving members of the fire department power to arrest for violation. He also suggests that in drawing up the ordinance the underwriters be consulted.

Adverse Report on Lamp Law.

Only automobiles will be required to display lights in Massachusetts. Although undoubtedly making for the protection of the public and for the safety of travel on the roads, the bill seeking to have all vehicles save merchandise wagons carry lamps after nightfall has been unfavorably reported by the committee on roads and bridges, which will almost certainly give it its quietus.

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SENATOR GRADY; HIS BILL

Aimed at Automobilists, it Makes Even Tammany Truckmen Subject to "One Year and $1000."

Senator Grady, of the New York Legislature, and a leader of Tammany Hall, recently had to hurry out of the way of an automobile. Although the Senator has driven behind a fast horse on numerous occasions, and, like nearly all other New Yorkers, has dodged street cars and wagons almost daily, the automobile incident aroused his ire and inspired a feeling of revenge by which statesmen are theoretically supposed not to be swayed.

Grady, however, decided that the "public needs protection," and that the only way to afford it is to prejudge not only all automobilists, but the users of all other vehicles, and to not only throw them in jail for long terms, but inflict also inordinately heavy fines. Accordingly, he framed and introduced the following bill, entitled, "An act for the protection of persons on public highways, roads, streets, avenues and places."

It begins with a declaration of rights, reciting that "All lawfully disposed persons have an equal right to be upon, use and traverse the public highways, roads, streets, avenues and places, in the State, and no person has a right to drive or ride thereon at a rate of speed that may be dangerous to others."

The provisions of the bill are as follows:

"All persons driving or riding in carriages, wagons, automobiles, or other vehicles or conveyances, or on bicycles, must regulate their speed so as not to endanger other persons who are or may be upon, traversing or crossing the same highway, street, avenue or place, in any city, town or village, or upon any country road, and no provision of law fixing any speed limit for automobiles or other conveyances, shall be construed as giving the right to anyone to operate or ride or drive an automobile or other conveyance at any speed that is dangerous to others, or which at all times and in all places is not regulated and controlled by and adapted to the conditions of the traffic then and there existing with regard to the number and proximity of vehicles and persons, and as to whether or not pedestrians are liable to be endangered while crossing the streets or roadways.

"Every person who rides, drives, operates, controls or directs any carriage, wagon, automobile, or other vehicle or conveyance, or a bicycle, upon any public highway, road, street, avenue or place, going at a speed which is then and there dangerous to other persons, shall be guilty of a misdemeanor, and upon conviction shall be imprisoned for not less than thirty days and fined not less than $100. And if any injury to any person be caused by or results from such dangerous speed, the person or persons convicted of so causing such injury shall be imprisoned not less than one year or more than two years, and fined not less than $1,000 or more than $2,000. And if such injury so caused to any person shall result in death of that person, the person convicted of so causing such injury and death shall be guilty of manslaughter in the second degree.

"Every person who rides, drives, operates, controls or directs, any carriages, wagon, automobile, or other vehicle or conveyance, or bicycle, on any public highway, road, street, avenue or place, who refuses to decrease the speed thereof, or to stop when called upon to do so by any policeman, constable, or other person authorized to make arrests for violation of law or ordinance, or who attempts by increasing speed to escape or avoid arrest for a violation of this act, shall upon conviction be imprisoned for not less than 30 days, and fined not less than $1,000, in addition to the penalties imposed by Section 3 of this act."

Illinois Adapts New York's Law.

In the Illinois Legislature, Representative Heine has introduced a measure that is almost a counterpart of the New York law. It provides for the erection of sign posts on the highways, denoting the speed changes at curves, descents or approaches to towns, registration with the Secretary of State by the owner of the machine on payment of $2 fee, registration by manufacturers or dealers on payment of 50 cents, and chauffeurs are required to take out a license, paying $2 each, and wear the number issued to them on their caps. Three lamps are to be carried by the car, on the glass of which the word "Illinois" must be displayed.

The speed clause in Heine's measure differs from the New York law in that it limits a motor vehicle to six miles an hour in closely built up sections; ten miles an hour within cities or villages, or elsewhere at a rate of fifteen miles an hour. On meeting horses which show a tendency to frighten, the automobile must come to a full stop, if necessary, to quiet the animals.

The penalties vary according to the nature of the offense. The maximum fine is $250, with a possibility of imprisonment for thirty days, at the discretion of the magistrate.

The passage of the six-mile clause would make it almost impossible to operate cars in cities or villages.

Kansas for 20 Miles per Hour.

The McBride bill introduced in the Kansas Legislature, which specified that "All automobiles must carry a bell or horn that can be heard a quarter of a mile, a light which can be seen half a mile, and a system of brakes which can bring the machine to a stop within 100 feet," was recommended for passage by the House committee, but the speed limit was raised from twelve to twenty miles an hour.

The next annual meeting of the board of directors of the New York State Automobile Association will be held in Buffalo, N. Y., on March 10.

FERRY BILL BECOMES LAW

President Signs the Measure Passed Unanimously by Congress and Ends Era of Vexation.

It is now possible for automobiles to go on and off ferryboats under their own power, thus eliminating the vexatious and somewhat expensive method of hiring men or horses to push or haul them on and off.

The Platt-Goulden amendment to Section 4,472 of the United States Revised Statutes, permitting it, and which was passed by the Senate and House of Representatives without a dissenting voice, was signed by President Roosevelt on Monday, thus making it a law. The new law is a successful culmination of the movement inaugurated by the Automobile Club of America. As amended, the law now is as follows:

"Nothing in the foregoing or following sections of this act shall prohibit the transportation by steam vessels of gasolene or any of the products of petroleum when carried by motor vehicles (commonly known as automobiles) using the same as a source of motive power; [provided, however, that all fire, if any, in such vehicles or automobiles be extinguished immediately after entering the said vessel, and that the same be not relighted until immediately before said vehicle shall leave the vessel;] provided, further that any owner, master, agent or other person having charge of passenger steam vessels shall have the right to refuse to transport automobile vehicles, the tanks of which contain gasolene, naphtha or other dangerous burning fluids."

The clause in brackets is the addition to the act.

Oregon to Require Fees and Tags.

Automobiles and motor bicycles will hereafter be licensed and tagged in Oregon, if a bill of Representative Jagger, passed unanimously by both houses, meets with the Governor's approval, of which there is scarcely a vestige of doubt.

Speed is to be limited to eight miles an hour in municipalities and to twenty-four miles an hour on country roads. Each machine is to be licensed, the fee for which is $3, and to display the number. It must be equipped with lamps, and if run by gasolene, must use mufflers in municipalities.

On country roads machines must be slowed down when approaching any vehicle drawn by a horse, if signalled to do so by the driver. Violations of the act are punishable by a fine of not more than $25 for the first offence, $50 for the second and $100 for the third.

Club Backs Up Pattee.

The Kansas City Automobile Club is behind Fred Pattee, of that city, in his fight against the city to prove that the officials illegally arrested and fined him $10 for driving a car without a license. The case will be taken to the Court of Appeals, and, if necessary, even higher.

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BENNETT CUP IS SAVED

France Backs Down and Relieves the Situation —Conditions to which Trouble was Due.

Sportsmanship has triumphed over commercialism and the Bennett cup race will not be soiled by contact with the Grand Prix, that "consolation race" projected in the interests of the French industry and designed to be won by the "also rans" of the French eliminating trials.

Cables from Paris dated Monday last convey this welcome information. They report a complete backdown on the part of the Automobile Club of France, which, indeed, was the only procedure possible to save either or both races. It means, of course, that the Bennett race and the Grand Prix will be run separately and on separate dates.

Germany, England, Austria, Switzerland, Belgium, Italy and America were represented at the meeting of the international commission, the speakers for the French Club being Baron de Zuylen, Marquis de Dion, M. Rene de Knyff and Comte R. de Vogue.

Both parties had thoroughly made up their minds before the proceedings began.

All the delegates from outside of France had come with one message and with no thoughts of compromise.

It was decided that a fortnight shall elapse between the two events, and that they shall not be mixed in any way whatever; that the Bennett Cup race shall be run as it has been run for two years past—as a separate event —and that all the participating clubs shall share in defraying expenses of the contest. The representatives of the various nations promised, on the other hand, to do their best for the success of the Grand Prix.

Count Sierstopff, who represented the German Club, was also the American representative, acting as proxy for Clarence Gray Dinsmore.

Paris, Feb. 10.—There is so much uncertainty about the position of the Bennett Cup and the Grand Prix that the whole affair has become a perfect imbroglio, from which it is difficult to see how the French and foreign clubs will be able to escape unless they give in to one another.

The position created by this dispute between the French and foreign clubs is a very peculiar one. Makers in this country have so long been accustomed to think that they hold absolute supremacy on the international market that they are somewhat alarmed at suddenly finding that the foreign industry is making considerable headway. But they are even now by no means aware of the full extent of the progress that has been made abroad, although they are beginning to see that their position is by no means so secure as they thought it was in view of the wonderfully fine exhibits of foreign productions which have been shown in New York and Berlin, as well, probably, as at the Olympia show, which opens to-day in London, which the English trade asserts is likely to stagger the French makers. Not only are the French becoming alive to this formidable foreign competition but their action in trying to control the sport for the benefit of the French industry has awakened a feeling abroad which clearly shows how determined foreign manufacturers are to fight the competition of French vehicles in their own markets. The foreign trade has now entered upon a period of active and systematic competition, when all the European countries, as well as the United States, are doing their level best to keep out French cars by producing vehicles that will give equal satisfaction to buyers. The present friction between the French and foreign clubs has not only revealed the full extent of the organized antagonism against French vehicles abroad, but it is also certain to increase this feeling by enabling foreign manufacturers to make this a patriotic question for the furtherance of their own interests. An example of this is seen in the formation of the British Empire Alliance, which aims at carrying on a propaganda in favor of British vehicles.

The struggle now going on is confined entirely to the manufacturers. The buyers are after all the most important part of the automobile community, and it does not matter much to them whether foreign makers take part in the forthcoming races or not, so long as they can buy good vehicles. They are always looking out for the best at the lowest possible cost, and they will not pay more for a home made article if they can get something quite as good abroad. It is here that the strength of the French competition chiefly lies, for with the increasingly heavy production of cars in this country the prime cost of such vehicles is being steadily reduced, with the result that French vehicles are sold at prices appreciably below the figures that can be accepted by foreign makers, unless, of course, the foreign markets are protected by almost prohibitive tariffs. So far as England and Germany are concerned, it is certain that it will take many years before makers will find themselves under the same conditions as the French for turning out cars at low cost, and, singularly enough, the British firms are actually handicapped by the considerable amount of English capital that is going into the French industry. Quite a dozen factories in this country are now owned partly or wholly by English capital, and so marked is this preference for French automobile undertakings that it seems as if more British capital is invested in the French industry than in the automobile industry in England. All this, of course, places France at a considerable advantage, in the sense that, while there is plenty of money for building cars cheaply in large numbers, the various Anglo-French concerns will have a sort of privileged situation in England, as is the case at present with Darracq and one or two other firms.

A. A. A. A $125,000 CORPORATION

"Takes Out Papers" in New Jersey—Action Follows Meeting Fraught with Importance.

If you please, the American Automobile Association is now a corporation operating under the laws of New Jersey, with an authorized capital of $125,000. Its articles of incorporation were filed on Monday last, 20th inst., and state the purposes of the corporation to be "to aid in the establishment of a uniform and stable system of laws relating to the regulation of automobiles and the privileges of owners, to promote the construction of good roads, to improve existing highways, to facilitate the organization of clubs and to enter into contracts to effect any of these objects."

Elliot C. Lee (the president), Charles H. Gillette (the secretary) and George E. Farrington (the treasurer) are named as incorporators.

The stock of the corporation is of par value $1 per share, one share being allotted to each member on the roll of the association.

Incorporation, which has been hanging fire for some time, followed a meeting of the board of directors on Friday last, 18th inst., at the Automobile Club of America, New York. At this meeting, which proved an important one, the president, Elliot C. Lee, presided and demonstrated his grasp of affairs. Others present were Secretary C. H. Gillette, Treasurer George F. Farrington, Dave H. Morris, of New York; Windsor T. White, of Cleveland; R. L. Lippitt, of Providence, and John Farson, of Chicago.

It was essentially a meeting of strong men, and it was made plain that they mean that the A. A. A. shall be the dominating organization in this country, and that, while seeking the support of all, it will brook no interference, either in the matter of race control or anything else. That the fact may not be understood, a declaration of its principles and purposes was drawn up and made public "for the benefit of whom it may concern." It seems to leave nothing unsaid, being as follows:

First—To unite in one national body the automobile clubs of the United States, and through them the individual automobilists.

Second—To promote and further all matters of a national character in which automobilists are interested, and particularly these: (a) Legislation, (b) good roads, (c) control of racing.

Third—To provide for its members actual benefits, and particularly these: (a) Reciprocal club privileges, (b) bureau of information concerning laws, touring routes, road maps, racing statistics and similar subjects; (c) a medium for the exchange of ideas and information of value to clubs in furthering their promotion and usefulness and of value to individual automobilists.

Following out the last provision, the secretary was instructed to prepare a list of road

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maps already published for the use of clubs and individual members.

The plans for the next Vanderbilt Cup race were briefly touched upon. It was the opinion of the directors that active work should begin as early as possible, as the coming race will probably be a greater undertaking in many ways than was the first contest. The secretary was instructed to call a meeting of the Race Committee as soon as possible for the discussion of a plan of action. The date for the closing of entries forthe race has been extended from March 15 to April 15. In the original deed of gift it is stipulated that entries must close on the earlier date.

Just before William K. Vanderbilt, Jr.'s, departure for Europe his consent was obtained to prolong the time one month. There is, however, a strong sentiment among the directors that additional time is needed, and word has been sent to Mr. Vanderbilt asking if he will advance the time to May 15, at least. If he returns a favorable reply, as is confidently expected, the board of directors will be able to fix the May date at the regular meeting on March 9.

No entries have yet been received and none is expected until a few days before the closing of the lists. Many prospective entrants have not completed arrangements for their racing cars, and there will be plenty of time to arrange all details for the race after May 15, as the event will not be run until September or October.

The legislative committee, of which James B. Dill is chairman, was empowered to proceed with the matter of incorporation, and promptly did so, as has been stated. It was also decided that the A. A. A. be represented at the public hearing on the Saxe bill at Albany, which occurs on the 28th inst.

The chairmanship of the racing board is in doubt, as W. C. Temple, who was asked to withdraw his resignation, is touring in the South, and has not yet been heard from. If he should not accede to the request, it is practically certain that William Wallace, of Boston, will be named as his successor at the directors' meeting next month.

Bates Appeals from $15 Fine.

An appeal has been filed by A. J. Bates in the case of the city of Joliet, Ill., against A. J. Bates for driving his automobile faster than the law allows. The case is the outgrowth of an accident which occurred last summer, when Bates's car and a farmer's wagon came into sudden collision at a cross street in Joliet. Bates was arrested and fined $15 and costs at the time, but appealed the case, and will fight it in the higher courts to secure vindication.

Mobile to Have Flower Parade.

The Automobile Club of Mobile, Ala., will give an automobile flower parade on March 6, the Monday preceding Mardi Gras. At least thirty cars will enter the parade, and the makers of the various cars to participate have donated prizes, besides those offered by the club.

NEW ORLEANS STARTS SEASON

First Meet Attracts Big Crowd and Bad Track Contributes a Spectacular Spill.

A large crowd—several thousand at least—saw the first race meet of the year—that at New Orleans, La.—given by the New Orleans Automobile Club on Sunday last. A chilling east wind and a muddy track soon convinced the watchers that no records would be broken. While the upper surface of the track was dry, it was a mere crust, and when the heavy machines struck any spots where there had been mud holes, the wheels sank deep in the mire beneath the buckshot upper-crust. It provided a sensational accident.

The first event was a one mile race for runabouts, weighing under 1,000 pounds. Out of nine entries, only three cars lined up for the stort. M. D. Bringer, driving a 10 H. P. Pope-Hartford, won easily in 2:33; F. S. Warmouth, in a St. Louis car, crossed the line second, and Palmer Abbot, driving an 8 H. P. Oldsmobile, third.

Only two machines started in the two-mile event for White steam cars. W. C. Faust, driving a 10 H. P. car, won the race in 7:34 3-5. Samuel Stone, driving a car of the same horsepower, was the other entrant.

The two-mile race for touring cars of 20 horsepower or under, each carrying three passengers and a driver, was won by Guy Stone, in a 16 H. P. Rambler. Stone literally ran away from the rest of the field,winning in 4:27, with about a hundred yards to spare. Palmer Abbot, in a 20 H. P. Oldsmobile, crossed the tape second, and J Mehlig, driving a 14-16 H. P. Knox, came in third. W. F. Pettit, in a 16 H. P. Rambler, was fourth.

Barney Oldfield next worked the Peerless "Green Dragon" around the track for a three-mile exhibition, making the distance in 3:30. The fourth race was a free-for-all, at three miles, for the Good Roads cup, donated by the Orleans Parish Good Roads Association. W. Philip Johnson, driving a 40 H. P. Thomas, led for over a mile, but Theodore Grunewald, in a 24 H. P. Locomobile, passed him like a flash at the second mile post and maintained the lead to the end. The only other starter, a 30 H. P. Pope-Toledo, driven by William Luck, finished last, of course. Time, 5:58.

Barney Oldfield, with his 60 H. P. Peerless, was down on the programme to meet Otto Maya in a special match race. Maya, perceiving the bad condition of the track, flatly refused to compete, and in order to carry out the event, Albert Bechold, who is travelling with Oldfield, offered to drive the "Blue Streak," a 24 H. P. Peerless. He fired up and started out to warm up, but at the three-quarters pole hit one of the soft spots. The front wheels sank in the mud and the machine turned a complete somersault, totally wrecking it. Bechold was thrown from the car and escaped with a few bruises. Oldfield tried the track for five miles against time, but finding it too heavy, quit at the end of four miles. The first mile was covered in 1:15, the second in 1:10½, the third in 1:13 and the fourth in 1:13½. The total for the four miles was 4:52.

The last event was a five-mile match race for $500, between Philip Johnson, in a 40 H. P. Thomas, and William Luck, in a 30 H. P. Pope-Toledo. Johnson won the event handily in 9:13 4-5. Summaries:

One mile, for runabouts under 1,000 pounds—M. D. Bringer, 10 H. P. Pope-Hartford, first; F. S. Warmouth, St. Louis, second; Palmer Abbot, 8 H. P. Oldsmobile, third. Time—2:33.

Two miles, for White steam cars—W. C. Faust, 10 H. P. White, first; Samuel Stone, 10 H. P. White, second. Time—7:34 3-5.

Two miles, for touring cars under 20 horsepower—Guy Stone, 16 H. P. Rambler, first; Palmer Abbot, 20 H. P. Oldsmobile, second; J. Mehlig, 14-16 H. P. Knox, third. Time—4:27.

Three miles against time—Barney Oldfield, 60 H. P. Peerless. Time—3:30.

Three miles, open, for Good Roads Cup—Theodore Grunewald, 24 H. P. Locomobile, first; W. Philip Johnson, 40 H. P. Thomas, second; William Luck, 30 H. P. Pope-Toledo, third. Time—5:58.

Four-mile exhibition against time—Barney Oldfield, 60 H. P. Peerless. Time—At first mile, 1:15; second mile, 1:10½; third mile, 1:13; fourth mile, 1:13½; total, 4:52.

Five-mile match race, for $500—Philip Johnson, 40 H. P. Thomas, first; William Luck, 30 H. P. Pope-Toledo, second. Time—9:13 4-5.

Lakewood to Defy the Law?

Although the New Jersey law specifies that any person engaging in an automobile race on the highways in the State shall be fined $50, that fact apparently has not phased the Lakewood Board of Trade. As evidence, the Lakewood folk are making preparations for six days of racing, beginning April 10.

The programme of events has not yet been determined, but will embrace contests for both racing and stock cars. According to newspaper reports, the course will be triangular, twenty-five miles long. The course would probably be from Lakewood, east to Spring Lake, through lower Squankum, about twelve miles; from Spring Lake south through Manasquan to Point Pleasant, five miles; thence west through Burrsville to Lakewood, ten miles. The road is one of the finest in New Jersey, especially from Point Pleasant to Lakewood. If this course is followed there would be several dangerous curves. The first one would be at Lower Squankum, where the road turns at right angles. The Spring Lake curve is even sharper, almost doubling on itself; across the 'Squan River is a drawbridge nearly a mile long; at Manasquan, Point Pleasant and Burrsville are sharp curves, but from Burrsville in the road is straight and level.

Lakewood also possesses a speedway nearly two miles long, where the short races would be held. There also is a five-mile road around Lake Carasaljo.

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The Up-to-Date Fire Chief Ready for Duty's Call.



DEPUTY CHIEF LALLY, OF THE BROOKLYN (N. Y.) FIRE DEPARTMENT, IN HIS LOCOMOBILE.

MINOR MENTION OF MOTORING MATTERS AT HOME AND ABROAD.

Cablegrams from Melbourne, Australia, state that Charles J. Glidden, the globe girdler, has covered 462 miles in Tasmania since landing, making his total mileage on the automobile tour of the world 21,900.

The French Automobile Club has decided to issue a wall chart for school use, depicting a modern automobile. With this is given a brief description and also instruction how to avoid accidents possible in automobile traffic.

According to more or less veracious reports in Fargo, N. D., a prohibition town, automobiles are doing a thriving business in transporting thirsty ones across the border. An automobile line has been established between Fargo, N. D., and Moorehead, Minn., for this convenience the latter town being the nearest "wet" place.

William Olhaver, a wholesale ice cream manufacturer at Aurora, Ill., has decided that the old-fashioned method of horse and wagon delivery is too slow for up-to-date business transactions. Accordingly, his ices will henceforth be delivered by automobile wagons.

Another person who wants $5,000 damages because his horse became frightened at an automobile is Delascus Mercer, a farmer, living near Bowling Green, Ohio. Mercer has filed a suit for this amount in the court of that city against Captain L. A. Black, of Bowling Green.

The Elmira Automobile Club was organized last week with twenty-nine members and these officers: President, Frederick H. Richardson; vice-president, Carrol D. Smith; secretary and treasurer, E. W. Gleckler, and captain, Guy W. Shoemaker.

Sir Thomas Lipton has presented a claim to the Southampton (England) corporation for $827 as compensation for damage recently caused to his automobile. The accident, it is stated, was due to the negligence of the local authorities, and the Works Committee, realizing their culpability, have recommended the payment of $625 in full settlement of the claim.

Municipal authorities in Monrovia, Cal., are going to take rather unusual and drastic measures to subdue the automobile scorcher, and, incidentally, to make travel generally on White Oak avenue uncomfortable. The authorities propose to grade and oil the avenue its length of two miles, and to build seven swales at intersecting streets. These swales are broad, shallow ditches, and a car will have to go over them at a snail's pace to avoid being bumped skyward.

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CASTING OF CYLINDERS

Appearance of a Four in One Gives Rise to Some Interesting Discussion.

When the four cylinder vertical idea first came into favor in this country it was considered standard practice to cast the cylinders in pairs in order to minimize the extent of accidental injury and guard against primary defects in the casting rendering the entire engine hors de combat.

In the furtherance of this same principle several manufacturers have gone a step beyond and made each cylinder individual, with an independent water jacket subsequently applied.

An English manufacturer has, on the other hand, attained the opposite extreme by producing the four cylinders with jackets integral, entire in one casting, and a discussion of this new departure, its disadvantages as contrasted with what in this connection is dubbed the "foreign idea,' is now going the rounds of the English press.

Where such radically differing ideas are presented for comparison, it is essential to sum up the advantages and disadvantages of each at length and carefully weigh the difference, then leave it to the "enlightened mind of a jury" of experts, and what is best in theory may probably be arrived at, but the test of six months' experience with both and a comparison of the results would probably be productive of a totally opposite conclusion. Here are some of the points urged for and against the single casting method:

"The whole of the cylinders being in one casting, one cylinder naturally supports another. The whole mass stiffens the crank case, and the strongest engine for the weight is produced.

"In separate cylinders the water jacket wall must completely encircle each cylinder. All cylinders cast together, water jacket wall only circles the ends of the outer cylinders and goes straight alongside the others, thus saving 50 per cent in weight of needless water jacket walls.

"By casting all cylinders in one piece it is possible to get the engine much shorter, as there need be only one water space between each cylinder, whereas with separate cylinders there are two water spaces, two cylinder walls and a small air space.

"The four cylinders being in one are bored upon the machine at one setting, and are bound to be in line with one another.

"A great number of water pipes with their nuts and unions are eliminated, the water being put in at one place at the back of cylinders and taken out at one place in the front.

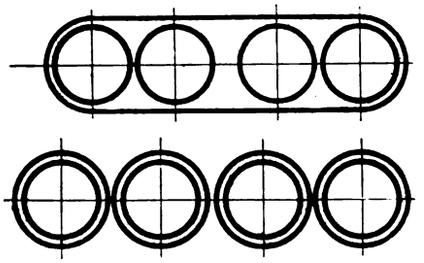
"The cores and patterns being larger, a clear, clean casting is assured. As shown above, this is easily machined correctly, thus a perfect set of cylinders is easily produced.

"A far larger body of water can be carried round the cylinder than is possible in any other four cylinder type without an excessively long and heavy engine. The engine therefore shows no signs of overheating, even under very trying conditions."

Now, coming to the defendant's side of the case, it will be noticed that in summing this up the same advocate has been retained, and disadvantages are only pointed out to call attention to the corresponding superiority of the single piece method.

"Should the piece be spoiled, either in the casting or machining, the whole four cylinders are spoiled instead of one only. As a matter of fact, the cores are so large that there is no difficulty, as in the single cylinder, of producing a thoroughly sound casting, and there is, therefore, no waste, so far as the maker is concerned.

"It may be argued that if a driver neglected to oil his engine and spoiled a cylinder all four or six would be spoiled, but as arrangements are made in most engines that each cylinder gets an equal amount of oil lubricant, if such gross neglect were made it



COMPARISON OF COOLING AREA AND SPACE ECONOMY.

would be impossible to spoil one cylinder without spoiling the lot, and therefore independent cylinders would have no advantage, but would, in fact, have the disadvantage that four or six separate ones would cost much more than the one piece casting. The same remarks apply in regard to frost. Water allowed to freeze in cylinders would almost be as certain to crack all four or six independent cylinders as to crack only one of them, but if one independent cylinder only were to be cracked, the cost of this, with the combustion head, etc., all in one piece, would be as costly to replace as the single piece method of construction.

"Careful experiments and tests have shown that the contraction and expansion is on the whole more even in the one piece construction than where independent cylinders with copper jackets or with one piece combustion heads are used.

"Independent cylinders were first used because it was thought that steel cylinders were preferrable to cast iron, and it was impossible to get steel made into pair cylinders or one piece cylinders. This fallacy has now been exploded, and it has been proved conclusively that, whether on a hundred-ton locomotive or a twenty-five-pound bicycle engine, fine gray cast iron is the very best possible material for use in cylinders, and this is proved by the fact that all the leading makers are abandoning steel for this purpose, but, inconsistently enough, are still retaining independent cylinders for no reason whatever. Fancy a marine engine or a high speed steam egine for electric lighting purposes being constructed with all its cylinders independent and bolted each of them separately on to the engine base! Such a design would invoke the ridicule of the engineering world, but for the moment its equivalent is tolerated on a motor car."

Effect of an Elmore Cocktail.

"Elmore cocktail" is the name of a new fluid to be used instead of gasolene as motive power for automobiles! The formula is composed of equal portions of gasolene, kerosene, alcohol and whiskey—"that's all." The mixture was fed to an Elmore car at Detroit last week, and it "worked," too.

The demonstration, which was given at Young & Miller's garage, No. 127 Grand River avenue, before the students of the Y. M. C. A. motor school, was a success. A single cylinder Elmore was used in the demonstration. Through a funnel gasolene was first fed to the engine, followed in order by kerosene, alcohol, whiskey and then a mixture of all four—an "Elmore cocktail," as some one dubbed it. With the gasolene the engine attained the usual speed, but the kerosene, it is stated, added still greater speed. The machine continued to run with half a pint of alcohol, and then with the same amount of whiskey. Then came the surprise of the test —a combination of all four worked as well as any of the other fuels, and a speed of 1,500 revolutions a minute was obtained. Another feature of the workings was that no readjustment of the carburetter was required when the fuels were changed.

Deals with an Illuminating Subject.

Amesbury, Mass., the home of Gray & Davis, the automobile lamp manufacturers, on a crossroad's signboard surmounted by the illuminating information that the "hub of the universe" is but forty miles distant, all showing brightly under the glare of a G. & D. searchlight, forms the introduction to the story of their pathfinders for 1905. Effective halftones, showing every detail of their lamps against a dead black ground, with descriptions in white, combine to give a strikingly artistic result. The mechanism of their generator, as well as its modus operandi, are clearly illustrated. It is a booklet that should help to spread the fame of its originators, and where it goes G. & D. lamps ought soon to follow, for it is a selling proposition.

Tells a Tale of Tires.

Of the publications dealing with the subject of tires none is more directly to the point, or more instructive, than the booklet of the Fisk Rubber Co., a revised edition of which has just been issued. The story of "The Fisk and Its Fastening" is interestingly told, and in the telling is let fall much that is not generally known concerning tire designs and materials and the matters of tire troubles and the cost of maintenance. It is one of those trade publications that is more than a mere circular; it is an informing booklet that informs whomsoever may possess it.

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LITTLE NOVELTY APPARENT

London Show Not Fruitful of Ideas—Napier Shows New Clutch—Small Cars Predominate.

Early reports of the Olympia show, which opened in London on February 10, are not indicative of any great amount of novelty in construction and equipment of the English cars being put forth for the coming season. One thing very noticeable is that the designers have evidently not thought it necessary to increase powers to any considerable extent, as cars of 8, 9, 10, 12 and 15 horsepower, many of them in the four cylinder class, predominate.

A new design in clutches, the product of the Napier works, is a departure from recognized standards, in that it does away with the usual leather facing and brings metal to metal, running in oil, in a cone clutch of the regular type. This in itself is not particularly new, as it has long been a feature of the Winton cars, but in the shape of individual clutches, its novelty lies in its application to the flywheel clutch. It consists of the usual cone, in this case of aluminum armored with a cast iron rim as a bearing surface, and so fastened as to be readily detachable for repair or replacement, the corresponding female member of which is bolted to the periphery of the flywheel. The principal claims of its designer are its ability to run in oil, simplicity and compactness of design, quick change of speed through the employment of light revolving parts, and the fact that all end thrust is obviated. In order to accomplish this last a powerful spiral spring is fitted on the inner face of the cone, so that when the clutch is engaged this is entirely inclosed within and exerting its pressure against the flywheel; when disengaged the pressure of the spring is taken up against a ball thrust bearing especially provided for the purpose. In action the lubricant is forced from between the engaged faces into deep grooves cut in the rim of the cone. It is further claimed that this clutch enables the car to get away from a stand still without a jerk, and as it has doubtless been made the subject of study and experiment long before being placed on view, its performance during the coming season will be watched with interest.

One of the greatest novelties of the show—to the Englishman—is a light car with horizontal opposed motor of the type now so familiar here. It is the James & Brown car, the builders of which, to quote one report, "have always been identified with the production of heavy cars of the horizontal engine type, and the car under notice is a very favorable specimen of original design." Three point suspension is employed, and the engine placed longitudinally directly under the centre of the car. The transmission is evidently a combination sliding gear, for the two lower speeds, with an individual clutch on the high, although a flywheel clutch, is also employed, drive being by a single chain. This is apparently the first of its kind to be seen in the "tight little isle."

The use of a tubular supporting axle, bearing the weight of the car body and containing the live axle, as embodied in the "New Orleans" car, is put forth as a novelty that calls for no comment. Artillery wheels with staggered spokes are a feature of the Argyll car, covered by patent and for which much is claimed by its builders. The spokes are staggered from the vertical plane, alternate spokes passing to the right and left of the iron hub. The chief advantage claimed for the arrangement, in addition to greater strength, is that it permits of tightening by drawing together the hub flanges by means of the bolts holding the hubs together should the wheel become loose through drying out.

The Stepney is a new form of supplementary wheel, which, according to its sponsors, is designed to enable the unfortunate who has damaged his tire to get home. It consists of a metal rim, to which is applied, in the usual manner, an inflated pneumatic tire, and fitted with three special clamps easily bolted to the wheel of the car itself. This lifts the latter very slightly and brings the car home on the new tire.

Without any attempt at disparagement, from what can be noted of the great English show at the present writing, it is seemingly a strange mixture of ideas, French and American, some of both long since tried out and discarded.

To Free Fuel from Water.

The "Eureka" Separator is a device designed especially as a preventative of the ills arising from the presence of water in the gasolene. The two will not mix, owing to the difference in specific gravity, and trouble invariably arises when they come together, particularly when the fuel in the tank runs low. In very cold weather a cake of ice may form in the bottom of the latter or burst the supply pipe. To guard against this or any of the other mishaps growing out of the same cause, the supply pipe from the tank is run into the bottom of one of these separators, while the delivery to the engine issues from the top. The separating material is placed in the centre of the device, which may readily be dismounted for examination. The arrangement of the lower half does not permit the incoming gasolene to agitate the separated water, which is contained in a pocket by itself, while in the upper the passage leading to the delivery pipe extends far enough below the level of the gasolene to provide an air or vapor cushion in the chamber above the latter, resulting in a uniform pressure at the carburetter. This attachment is being placed on the market in three sizes by the Eureka Separator Co., of Rockford, Ill., and applications have been made for patents to cover it.

The chief of the St. Louis Fire Department will henceforth "do duty" in a motor car. He has selected a Locomobile for the purpose.

MEANING OF EFFICIENCY

The Many Attributes of which it is Made Up and How they are Co-related.

The term efficiency, like the much abused term horse power, may mean a great deal or nothing at all. It depends on the man who uses it.

In the engineering of great power plants it has a powerful significance, and its value, coupled with the frequency with which it is used, has given it an important sound, and, naturally enough, a not infrequent use in a loose sense with no reference to its true meaning.

Taken in its purely generic use, it is a measure of the relative usefulness of a process which converts energy in one form to another better suited to the needs of man; it is an abstract expression of the unavoidable losses which such conversion entails. It may be called an expression of the toll extorted by nature for the performance of any task, and is applicable to any process involving such transformation or to the machine which does the work. For example, the heat energy of the sun, feeding that mysterious existence which we call life, the plant life of a bygone age, is stored up in growing vegetation and there retained till centuries later; it is reconverted into heat by the process of combustion—the burning of the coal fire. But not all of the energy originally given to the plant life is to be reclaimed. A certain amount has been lost in the double transfer, a portion of which is concretely represented by the ash, and an expression for the loss is found in the ratio of heat applied to heat given up—the efficiency of the process.

So in the steam boiler and engine, a certain amount of the heat of the coal is available in the form of work, and a certain amount is to all intents and purposes lost, not lost to the universe, but lost to man; and the ratio of the power equivalent of the heat of the coal to the mechanical power available at the driving shaft of the engine is called the efficiency of the plant. Or, again, the engine alone being considered, the ratio of the power represeneted by a given quantity of steam at a stated pressure and the work which is developed and transmitted to other machines is termed its efficiency.

But efficiency may be of various sorts. It may embrace the process as a whole and involve merely the two energies, impressed and delivered, or it may refer to any one step in the process or to several steps taken together. The efficiency of a plant involves many factors of loss and a number of different processes, while the efficiency of a turning shaft is merely an expression for the frictional loss of its bearings. Thus, in an engine, the term may be applied in its thermal sense to a consideration of heat alone; mechanically, with reference to frictional losses and work absorbed by internal stresses; or, loosely, as a measure of its comparative value as a ma-

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chine, powerful, serviceable, successful, merely as a statement of its ability to perform the various demands of its usage.

A serious consideration of the efficiency of a motor is, then, an investigation into its economy; and the relative value of the factor increases with the increase of the expenditure involved. In a large machine, whose consumption is by far the greatest factor in the expense of its operation, it becomes of very great importance, while in a smaller affair, whose consumption is limited, it may shrink to insignificance when compared with other factors which bear more directly on its utility. In the automobile motor, while it is actually just as important to get as great a proportion of work from the fuel as it is in a large lighting plant, still the cost of the fuel is so slight as compared with other factors, and the difference in cents or in distance travelled on one charge, between an engine of high and another of low efficiency, is so slight that it may well be set aside for other considerations.

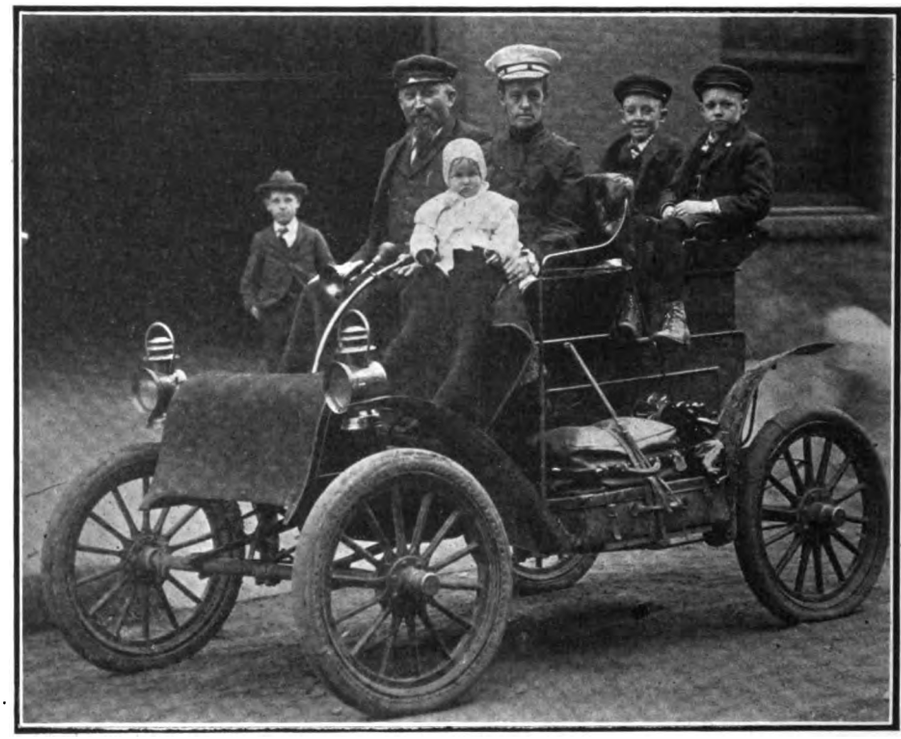
The object of the designer in building a motor is to secure one of ample power for the car; one which is capable of doing its work under a wide variation of conditions; one which will carry approximately its full load throughout its speed range, and one which is silent, vibrationless, simple and not liable to get out of order. Of these, next to the desideratum of ample power, which is to be presupposed, the more important considerations are those which contribute to smooth action and simplicity of parts. The difference one way or the other of a penny-'orth of fuel is so slight as to come in for but a small share of consideration, if any at all. And a machine which is referred to as being "highly efficient," while satisfactory in every way, may yet be wasteful of its fuel.

The factor of mechanical efficiency, involving as it does the friction of moving parts and their balance as well, is of far greater importance than that of the whole motor, or of the heat alone. And, although the factor is seldom, if at all, reduced to figures, it is to its increase that the designer's effort is largely bent at the present time. The improvements in lubricating devices, the increase in length of bearings, in some cases the application of ball bearings to the motors tending, as they do, to reduce the power lost in turning over the motor itself and subscribing to its smooth running qualities, serve to decrease its internal losses.

The better knowledge of the requirements of the cooling system which is gained by each year's experience is tending to bring up the efficiency from a thermal standpoint. Other improvements which look directly toward better service—that is, better ignition, better carburation and better control—also tend to bring down the fuel consumption as well. But the present objective of the maker is not to reduce the cost of operation as affected by the fuel consumed so much as it is to reduce the cost of maintenance, which has been the greatest cost, next to that of manufacture. It is to build a motor which will be cheap to construct and cheap to operate; easy to control and easy to get at; one which will be simple, silent and sure. But whether it be economical or wasteful of its fuel is of comparatively minor importance at the present stage of the industry. P. O.

The Farmer Brought Up to Date.

The farmer, bag, baggage and family, from the youngest up, in all the unaccustomed finery and discomfort of Sunday-go-to-meetin' togs, slowly plodding townward or home again in a bumping wagon drawn by the patient plow-pullers, is a sight so familiar on country roads as to form part and parcel of the scenery.



FARMER ELLIOT AND HIS FAMILY.

But the same aggregation, likewise on pleasure bent, but now speeding along in a gasolene runabout, is a vision to make the average inhabitant sit up and stare. This, in short, is what a Minnesota farmer does—one R. E. Elliot, of Litchfield, in that State, is the pioneer who is showing his brother agriculturists in his locality and at the same time demonstrating to the world at large that the automobile is the farmer's best friend and not his enemy.

The proud possessor of a Northern runabout, which he has, by the way, readily converted into a family car, as will be noted in the illustration. Mr. Elliot does not confine himself to town jaunts, but frequently makes the 100-mile run to Minneapolis with his family, and has taken them on many long trips besides, in all of which he has never had a breakdown. He is firmly convinced that the automobile is a necessity for every farmer, and in time the latter will appreciate the advantage of owning his own "trolley car."

Some Motor Stage Lines.

A. C. Brewster, of the Williams House, Williamsburg, Mass., will run an automobile stage route between that place and Goshen next summer. It is thought that better facilities for reaching Goshen will make it more popular as a summer resort, hence the use of automobiles.

The New York Zoological Garden is to have automobiles, not for the use of the inmates, but more particularly for the visitors. The board of managers has authorized the construction of a motor road equipped with automobiles to carry visitors to any point in the extensive grounds.

The fact that Coshocton, Ohio, has no streetcar service has not caused the citizens of that place much worriment. An automobile stage line will be in operation in every street in the city by April 1. A six cylinder engine will be used to drive the cars, and each car will have a seating capacity of twenty passengers.

F. W. Vogeler, general traffic manager of the Salmon River Stage Co., at Salt Lake, Utah, is preparing to inaugurate an automobile stage service between Las Vegas and Bullfrog, with the object in view of affording better communication between the mining towns that are being developed along the proposed route. The car used will be a Peerless.

One of the most recent automobile passenger transit lines has just been organized in Rhode Island, to run between Westerly and Weekapaug. Arrangements have been made to use touring automobiles, and F. C. Buffum, of the Weekapaug Inn, will have charge of the transportation.

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ONE MORE WONDER WORKER

It's Hatching in Wrightsville and Will Make All Other Motor Cars "Back Numbers."

From Wrightsville—it is too well known to call for any more definite location on the map—comes the startling news that "there is in store for the automobile world a surprise that may shake the industry to its foundations."

If this be not sufficient to cause manufacturers who have large amounts of capital invested in the production of automobiles of the usual complicated standard of perfection, just listen to this: "C. H. A. Dessingner & Bro., the well known gas engine men of this place, have been for some time perfecting an engine that will make an automobile as simple as a bobsled." Now get ready to stand from under. "It is a chain transsion, an entirely new manner of controlling the speed of the machine, backing it, applying the brake," etc.

To convince the doubting Thomases that this is not all but more than is claimed for it, hear the latter: "Both of the men are inventors, but they are so thoroughly practical and so entirely free from dreams and delusive theories that they are not to be placed in the same class with experimenters." And then, as a further recommendation: "They are mechanics who work on mechanical principles which they fully understand." But it is in the description of the new invention that the cub reporter, for it must have been him, or the editor, does himself proud.

"The chain transmission is a little simple thing which is incased in a steel box but twelve inches square. The angle lever which operates it is the only one needed to steer the car, start it, stop, back it up or apply the brakes. All other levers, such as other automobiles which are now on the market, are done away with.

"Within a few weeks the Dessingers will have a complete automobile ready for the test," with its one wondrous lever should here be interpolated, but of that more anon. If it gives the result the men expect York County may look out for an automobile works that will turn the eyes of the world this way. Last year the Dessigners built an automobile, but it was simply as a guide to the perfect one which they had in view,"

But now sit up and really listen: "The perfect one is coming." All hail.

It won't be necessary to rub your head and wonder if it can all be true; just listen to the wisdom condescendingly given up by one of the soon to be far famed inventors.

"The vital part of an automobile," said C. H. A. Dessigner to the Gazette to-day—we wronged the cub reporter, it's the editor, after all—"is the engine. We do not have to experiment with our engines. We now have the simplest, strongest and most durable gas and gasolene engines in the world. We have studied engines as mechanics for fifteen years. We know their weak points and we have labored diligently to make the weak points strong. We have a perfect sparker. The only way to get it out of order is to break it with a hammer." He must have been a patent medicine advertiser before he became an inventor. "Our engines turn gasolene into gas in the easiest, simplest manner in the world. There is not a single weak point in our engines which is due to a lack of understanding of the making of engines. Now, considering these things, we have come to the conclusion that we can put out an automobile that will be the result of knowledge and experience. That is what we are going to do."

Take warning all manufacturers who are now turning out four cylindered, automatic carburetted, direct driven, pneumatic tired imitations of an automobile, for the great inventor spurns your products one and all! He says:

"I have examined many of the automobiles now on the market. Bicycle houses, etc., that don't know a gas engine from a dynamo went into the automobile business because they saw it was profitable and their cycle trade was waning. We realize that the engine is the whole car, so to speak, and we can make the engine. The chain transmission will make the machine nearly noiseless. There will not be a cog wheel about the car to wear out and grind like an ice cream freezer."

And all this for a "medium price"—seemingly philanthropy and startling inventions are the simultaneous product of the great cerebrum. "We have never tried to get an abnormal price for our work. We know that automobiles are too high, and we will not attempt to rob the public. We will ask a price that will give us the right sort of a profit, and we will deliver a car that will stand the knocks. Until we can do this we will not go into the automobile business." Not so bad as it looked at first, if they keep their word.

As a matter of information, it is added that the Dessigner Bros. build gasolene traction engines, and that there are only two or three other manufacturers in the same line in the country. It is to be hoped there are no more, if all are to be afflicted with the same aspirations.

An automobile as simple as a bobsled, with an absolutely perfect engine, a simple little thing in a small steel box, one lever to do all the business, and not the slightest resemblance to an ice cream freezer; a sparker that nothing short of the gentle attentions of a hammer will cause to knock off work. What would you have, what more could mortal man desire in exchange for a medium amount of the coin of the realm? How on earth has York County escaped the eyes of the world thus long?

Purdue to Teach Motor Mechanism.

Purdue University, Lafayette, Ind., has added the study of automobiles to its curriculum. Motors, transmission gears and ignition comprise the first subjects for discussion.

TEST OF ANTI-SLIP DEVICES

Tried in Slimy Mud and Soft Soap with Varying and Interesting Results.

It is evident after a perusal of the reports of the recent side slip trials held at the Crystal Palace, London, that one of the principal reasons for the existence of such a great number of anti-skidding appliances on the market simultaneously is not alone the fact that there is a real demand for something of the kind, but that the article that can prove its worth beyond peradventure has not been invented.

Of the half dozen contrivances tested out before the judges four were the familiar metal studded bands, the Sawyer, Samson, Grose and Watkins; one of chains, the Parsons, and the Empire, "back pedalling support" for motor bicycles.

The prepared course was a smooth concrete way, forty feet broad, with a fair gradient. As it was treated to a generous layer of slimy mud and soft soap preparatory to the trial, there can be slight doubt but what it represented the extreme of actual wet weather road conditions. The first heat was running over this surface making slow turns at the rate of twelve miles an hour. The Sawyer bands were fitted to three wheels of the car, while the Watkins had them only on the drivers. Then came the crucial test of making a sudden right angled turn at six miles an hour, and in spite of locking the steering wheels the Watkins travelled straight ahead, as the front wheels could not take hold. The Samson car was the more boldly driven, and came off with flying colors in both tests. The remaining cars proceeded with undue caution, and though successful on the grease, some slipped a little on the dry concrete.

In the brake trials the skidding was most noticeable on the dry concrete. The Samson and Sawyer both slipped there, while the Parsons and Grose skidded somewhat in the grease. The Empire motorcycle got through this trial with credit, but in the sharp turn at six miles an hour went down the moment the curve was attempted, giving its rider a bath in the grease and mud. In the final restarting test all performed satisfactorily. The Samson device was awarded first prize and the Grose second.

Pope Pius Order Two Cars.

Pope Pius X has recently ordered two automobiles, which it is stated seem to have the effect of causing a black look on Cardinal Ferrari's face. This cardinal embraced the idea some time ago of paying visits in an automobile, but it did not meet with the approval of the other members of the Sacred College. They therefore gave no votes to Ferrari's name, thinking he would never remain in the holy precincts of the Vatican when he had experienced the joys of automobiling. And now the Pope himself has "fallen"!

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Successful Car Building.

WE are this year standing firmly on the fact that we have built a real car, because we have built a car adapted to American conditions, American roads and the American temperament. We know our American market as no French builder can know it.

We have surmounted the problems of car-building this year as we never surmounted them before, although our progress has been steady and on right lines.

We believe the Pierce car to-day expresses the best that can be had in car-building, and we are willing to abide by the result of actual experiment.

Booklet describing the six 1905 cars of the George N. Pierce Company, with special booklets describing the mechanism of each, will be sent on request.

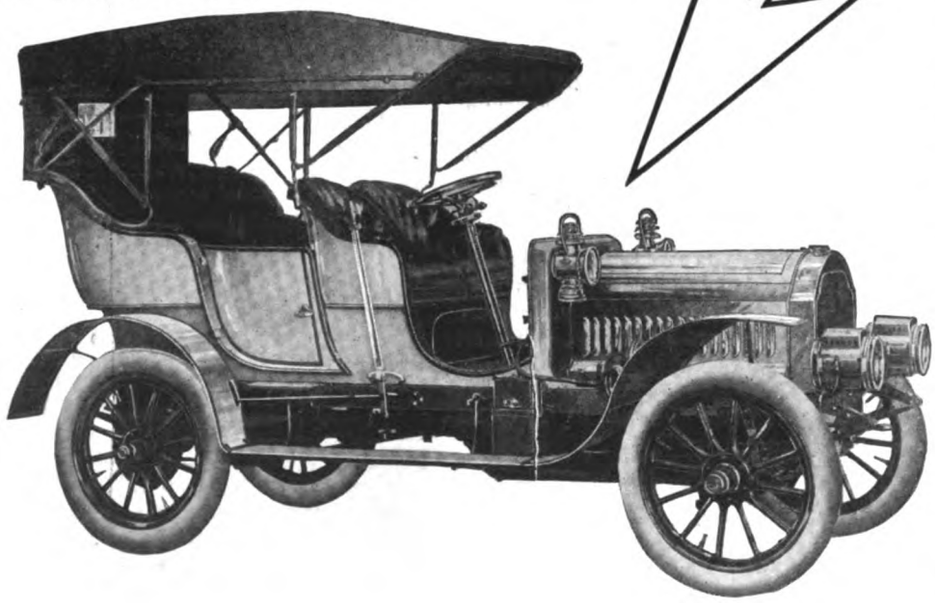
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The 28-32 horse-power Pierce Great Arrow Car, King of Belgium Tonneau, with side entrance, equipped with cape top, extending well over front seat, drop curtains to completely enclose sides and rear. **PRICE, $4,000.** Top extra.



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MILLER-MUNDY MOTOR CAR COMPANY, Utica, N. Y.
CENTRAL AUTOMOBILE EXCHANGE, Worcester, Mass.
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THE SHEPARD CO., Providence, R. I.
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S. A. MINER, Hartford, Conn.
A. C. THOMPSON, CO., Spokane, Wash.

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The Week's Patents.

781,088. Anti-Friction Bearing. Charles Opp, Brooklyn, N. Y. Filed March 30, 1904. Serial No. 200,707.

Claim—A spindle which is of less diameter than the bore of the hub or box through which it passes, said spindle being provided in the opposite sides and in the bottom thereof with longitudinal grooves, the grooves at the opposite sides of the spindle being deeper than that at the bottom thereof, and bearing rollers placed in said grooves and whereby the spindle is supported eccentrically in the hub or box and bears thereon only at the top thereof, all of said rollers being of the same diameter, substantially as shown and described.

781,116. Motor Car. John Wilkinson, Syracuse, N. Y., assignor to H. H. Franklin Manufacturing Company, Syracuse, N. Y., a Corporation of New York. Filed May 17, 1904. Serial No. 208,465.

Claim—1. In a motor car, the combination of a frame, and a hood at the front of the frame hinged at its front portion, substantially as and for the purpose described.

2. In a motor car, the combination of a frame, a dashboard, and a hood in front of the dashboard having its front portion hinged and its rear portion contiguous to the dashboard, substantially as and for the purpose specified.

781,214. Motor Plough. Samuel E. Kurtz, Sac City, Iowa, assignor of one-half to Albert E. Cook, Odebolt, Iowa. Filed September 9, 1902. Serial No. 122,700.

Claim—1. A motor driven agricultural machine, comprising gang frames inclined to the line of travel and reversely arranged with relation to one another, driven shafts journaled in the respective gang frames and arranged for their longitudinal axes to lie in planes inclined equally and reversely to the line of travel, gangs of ploughing and propelling members mounted on the respective shafts, the oblique members of one gang being reversely disposed to the members of the other gang, a main frame supported by the gang frames and the gangs of members, a motor on said main frame, and counter shafts driven by the motor and geared to the gang shafts for driving the reversely arranged members of the gangs positively and at uniform speeds.

781,218. Adjustable gear. George M. Mills, Jersey City, N. J. Filed April 12, 1904. Serial No. 202,838.

Claim.—1. In adjustable gearing, the combination with parts constituting a hub and a gear-section, respectively, of an eccentric device revolubly bearing in one part and having a sliding engagement with the other.

781,245. Device for closing the Longitudinal slits in pneumatic tires. Richard J. Voss, Davenport, Iowa, assignor of one-half to Frank S. Harding, Davenport, Iowa. Filed Nov. 2, 1904. Serial No. 231,144..

Claim.—1. A device of the class described, comprising a plurality of plates, arranged in pairs and adapted to be secured to the tire on each side of the longitudinal opening in the latter, laterally extending marginal flanges carried by the plates, and a slide provided with inwardly projecting flanges adapted to engage the marginal flanges of each pair of plates for closing said longitudinal opening.

781,262. Vehicle wheel. Zachariah Xevers, Santa Cruz, Cal. Filed June 24, 1904. Serial No. 213,944.

Claim.—1. The combination with a rim having a channeled seat about its periphery, of a channeled metallic strip and a corrugated seat confined within said channeled strip, and the whole confined within said channeled seat and having flanges extended above the rim and against which sides of the tire are designed to abut.

781,265. Variable-speed gear. William O. Brown, Chicago, Ill., assignor to Appleton J. Pattison, Toronto, Ontario, Canada. Filed April 29, 1904. Serial No. 205,588.

Claim.—1. Variable-speed gearing of the character described comprising a driving part, a driven part and two sets of gears of different predetermined ratios adapted to act independently and in co-operation with one another to impart different degrees of speed



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WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

FOR SALE—1904 WHITE touring car in excellent condition; has not been run since being overhauled; baskets, lamps and canopy top. Price, $1200.00. Address, Mr. A., care of THE MOTOR WORLD.

FOR SALE—1904 24 H. P. PEERLESS touring car; has been thoroughly overhauled and painted and not used since. Price, $2300 00, net cash. This car cost as it stands over $4300.00. Has a canopy top and baskets, and is undoubtedly a better proposition than any 1905 model listing at this price. Address Mr. B., care of THE MOTOR WORLD.

FOR SALE—1904 8 H. P. PIERCE stanhope, with top, in A-1 condition throughout; will carry four people if desirable. Price, $800.00. Cost $1300.00. The best machine of its class in the world. Address, C., care of THE MOTOR WORLD.

FOR SALE—1904 Model L PACKARD in excellent condition; painted and overhauled and not used since; three extra inner tubes; two extra covers; side baskets. Price, $2200 00. Address, Mr. D. E., care of THE MOTOR WORLD.

FOR SALE—A limited supply of wire wheels for 1901 and 1902 Oldsmobiles, $5.00 per set, net. Mud guards, complete, for the same machines, $6.00 per set, net. Rubber mats for the same, $1.25 each, net. These prices will hold good only as long as the material lasts. OLDS MOTOR WORKS, Detroit, Mich.

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to the driven part, substantially as described.

781,299. Switch system for electric vehicles. Ferdinand Porsche and Ludwig Lohner, Vienna, Austria-Hungary. Filed Aug. 5, 1902. Serial No. 118,486.

Claim.—1. The combination of a dynamo, a motor, an open electric circuit comprising the dynamo elements and motor, a variable resistance, and a common means of making the circuit and for switching the resistance parallel with the dynamo field and varying the same during the maintenance of the circuit, substantially as described.

81,304. Variable driving mechanism. Carl C. Riotte and Eugene A. Riotte, New York, N. Y. Filed March 29, 1901. Serial No. 53,415.

Claim—For driving gear, a shaft, a gear carrier, having a hub for revolubly engaging said shaft, a body, a wall spaced apart therefrom, and braces connecting said wall and body at separate points, the parts being arranged with a space between said wall, body and braces, for receiving a gear to be held in juxtaposition to said shaft, all formed in one integral piece.

81,318. Grip tread for rubber tires. Harry D. Weed, Canastota, N. Y. Filed July 8, 1904. Serial No. 215,812.

Claim.—1. A grip-tread for elastic tires comprising a series of cups removably applied to the outer surface of the tire, and means to hold said cups in operative position.

2. In a tread for elastic tires a series of cups, each having its base detachably applied to the tire.

81,484. Rotary Internal combustion engine. Thomas Wright, Jersey City, N. J. Filed October 13, 1902. Serial No. 127,066.

Claim.—1. In an internal combustion engine the combination of a stationary shaft, a group of cylinders mounted to move around the centre thereof, pistons in the cylinders, eccentric connections between the pistons and shaft, means for controlling and igniting the cylinder charges, a continuous annular drum extending around and inclosing the outer ends of the cylinders, a plurality of spring seated closures commanding exhaust openings from the drum, and connections passing laterally from the ends of the cylinders to the drum.

781,523. Release power clutch. Edward Huber, Marion, Ohio. Filed April 25, 1904. Serial No. 204,820.

Claim.—1. In combination with a revoluble driving element and a driven element revoluble independently thereof and having a clutch member, an element driven by the driving element and having a stop and a detent, a dog adapted to engage the clutch member of the driven element and adapted to be engaged and released by the detent, a pivoted element connecting the dog to the element, a spring coacting with the stop, and elevent, a spring coacting with the stop, and a detent to normally maintain the latter in such relation to the dog as to keep the dog in engaged position with reference to the driven element, the said spring being adapted upon an overload to release the detent from the dog and permit the latter to disengage the driven element, substantially as described.

781,533. Brake mechanism. Peter M. Kling, Elizabeth, N. J. Filed Aug. 5, 1904. Serial No. 219,611.

Claim.—1. In a brake mechanism, the combination of an operating device and winding spindle, of inverted cones mounted on said spindle and operating device, and a cable connecting the opposite ends of said cones.

781,553. Lubricator. Henry Ritter, Cincinnati, Ohio, assignor to the Lunkenheimer Company, Cincinnati, Ohio, a corporation of Ohio. Filed Oct. 10, 1904. Serial No. 227,870.

Claim.—1. In a lubricator of the character described and in combination with the body of the cup and its appurtenances, a discharge nipple opening into a sight-feed chamber, said sight-feed chamber having a discharge aperture leading to the parts to be lubricated, a check-valve in said discharge aperture, and an aperture adjacent to the sight-feed chamber and communicating therewith, leading from said discharge aperture to the body of the cup, substantially as described.

781,565. Seat connecting appliance for vehicles. Hinsdale Smith, Springfield, Mass. Filed May 17, 1904. Serial No. 208,416.

Claim.—1. The combination with a vehicle body and a pair of seats having seat bottoms and rounded backs with forward upright continuations arranged side by side, of a rigid metallic part overlying the edges of said seat-back continuations, and having an angular projection extending from its inner side between said formed continuations, and means for fastening said projection and said upright continuations together.

781,584. Lubricator. Jerome J. Aull, Cincinnati, Ohio, assignor to the Lunkenheimer Company, Cincinnati, Ohio, a corporation of Ohio. Filed Oct. 10, 1904. Serial No. 227,843.

Claim.—1. In a multiple self-feeding lubricator, the combination of an oil-reservoir divided into a main compartment and an auxiliary compartment communicating therewith, a series of valve controlled sight-feeds opening from the bottom of said auxiliary compartment, from which extend chambers, pumping mechanisms automatically actuated and communicating with said chambers, check-valves in discharge outlets from each of the pumps and sight-feed mechanisms and leading to the parts to be lubricated, substantially as described.

781,585. Lubricator. Jerome J. Aull, Cincinnati, assignor to the Lunkenheimer Company, Cincinnati, Ohio, a corporation of Ohio. Filed Oct. 10, 1904. Serial No. 227,844.

Claim.—1. In a lubricator of the character described and in combination with the body of the cup and its appurtenances a discharge-nipple opening into a sight-feed chamber, there being a discharge aperture leading from the sight feed chamber and a baffling device within said sight feed chamber, whereby back shots or back pressures are prevented from interfering with the proper formation of the drops and discharged the oil in dropping from the nipple, substantially as described.

781,604. Lubricating system for explosive engines. Peter C. Hewitt and Edward R. Hewitt, New York, N. Y. Filed June 13, 1904. Serial No. 219,293.

Claim.—1. A lubricator comprising an oil supply tank and provided with passages ramifying therefrom to the various points to be lubricated, and pumping devices of different capacities respectively located in the branches of said passages.

781,607. Rotary explosive engine. John W. Kales, Franklinville, N. Y. Filed Sept. 30, 1902. Serial No. 125,244.

Claim.—1. In an explosive-engine, a turbine wheel having open-ended and otherwise closed pockets bowed transversely outward across the wheel, and a casing inclosing the wheel and closing the ends of the pockets, and also provided with a feeding port, disposed to discharge longitudinally into the pockets.

781,648. Casing for Compound Motors. David F. Graham and Frank A. Fox, Stamford, Conn., assignors, by mesne assignments, to The Eisenhuth Horseless Vehicle Company, Middletown, Conn., a corporation of Maine. Filed April 1, 1903. Renewed November 10, 1904. Serial No. 232,138.

Claim.—A crank-shaft chamber or inclosing casing for combustion motors, comprising as an entirety an upper section and a lower section, said sections detachably secured together, the upper section being provided with longitudinal extensions at its ends adapted to receive bearings for the crank-shaft, whereby the said crank-shaft may be placed therein before the lower section is secured to the upper section, and said lower section being also provided with longitudinal extensions and bearings clamped between said extensions, comprising a sleeve provided with interior screw threads engaging screw threads on the crank shaft by which it can be adjusted thereon, means for securing it on said shaft, and a bushing on said sleeve held in fixed relation to the casing, substantially as described.

781,677. Gearing for Automobiles. Orlando Richards, Bristol, Wis. Filed October 20, 1903. Serial No. 177,785.

Claim.—A tubular axle including a central hollow section having internally-threaded collars, tubular sections engaging said threaded collars, end casings, each consisting of a pair of pivotally-connected members, the inner members being provided with internally-threaded collars engaging the outer ends of the tubular sections, internally-threaded collars upon the outer ends of the outer members of the end sections, tubular spindles engaging said internally-threaded collars, and wheels journaled upon said spindles with the inner ends of their hubs contacting with the outer ends of the internally-threaded collars in which the tubular spindles are mounted; in combination with a drive-shaft disposed within the axle and having its extremities fixedly connected with the hubs of the wheels; said drive-shaft being composed of two inner and two outer members, the inner and the outer members being connected by universal joints disposed within the end casings of the tubular axle, internally-toothed gear-casings secured upon the inner shaft sections near the inner, adjacent ends of the latter, a sprocket wheel, journaled loosely upon the adjacent ends of the inner shaft sections which are thereby maintained in axial alignment, and gears disposed within and meshing with the internally-toothed gear-casings and connecting the latter with the sprocket wheel.

781,682. Gearing for Motor Vehicles. Charles Schmidt, Warren, Ohio, assignor to Packard Motor Car Co., Warren, Ohio, a corporation of West Virginia. Filed November 20, 1902. Serial No. 132,112.

Claim—1. In a transmission gearing for motor vehicles, the combination of a motor shaft, a driven shaft, a clutch block arranged to turn with and slide on the motor shaft, a counter shaft provided with gears of different sizes, a clutch member geared to the counter shaft and normally disconnected from the motor shaft, gears mounted to slide on the driven shaft and to engage with the different sized gears on the counter shaft a clutch member connected to said gears on the driven shaft, a rod adapted to slide said gears and their attached clutch member on the driven shaft, and means actuated by said rod for sliding the clutch block on the motor shaft.

781,687. Former or Mold for Making Pneumatic Tires or the Like. Thomas Sloper,

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Devizes, England, assignor to Christian Hamilton Gray, Silvertown, Essex, England. Filed March 12, 1904. Serial No. 197,868.

Claim—1. In a "former" for tires, the combination with a circular support having a series of perforations, of movable pins carried in these perforations and adapted to project from the face of the support or to be withdrawn so that they do not project, substantially as set forth.

781,745. Negative Pole Plate. Paul Seeliger, Hagen, Germany, assignor to Electric Storage Battery Company, Philadelphia, Pa., a corporation of New Jersey. Filed June 18, 1903. Serial No. 162,036.

Claim—1. Negative pole plate active material possessed of loose structure and being the product derived from expansion and disintegration induced by reducing and discharging a mixture of active and inert materials, substantially as described.

781,751. Gas Engine. Elliott J. Stoddard, Detroit, Mich., assignor to The Free-Piston Gas Engine Company, Detroit, Mich. Filed December 10, 1900. Renewed July 8, 1904. Serial No. 215,728.

Claim—1. In a gas engine, the combination of a cross-head, a connecting rod pivoted to said cross head and to the engine crank, a piston rod arranged to slide through said cross head, a clutch upon said cross head adapted to prevent a motion of said piston rod in one direction relative to said cross head, but to permit such motion in the other direction, and means for lifting said clutch out of engagement with said piston rod during the motion of said cross head in one direction, substantially as described.

781,789. Brake and Motor Controlling Mechanism for Motor Vehicles. Charles Schmidt, Detroit, Mich., assignor to The Packard Motor Car Company, Detroit, Mich., a corporation of West Virginia. Filed July 5, 1904. Serial No. 215,272.

Claim—1. In a motor vehicle, the combination with a frame and a motor supported thereon, a drive axle and a transmission shaft extending between said motor and said drive axle, of a clutch for coupling said motor to said transmission shaft, a foot lever for operating said clutch, a brake mechanism, an operating lever therefor, a connection between said brake-operating mechanism and said foot lever, whereby the operation of the brake will release said clutch, and means for limiting the movement imparted to said clutch to the initial movement of said brake-operating mechanism.

781,795. Storage Battery Electrode. Elmer A. Sperry, Cleveland, Ohio, assignor to National Battery Company, Buffalo, N. Y., a corporation of New York. Filed January 27, 1904. Serial No. 190,878.

Claim—1. A storage battery electrode, consisting of a frame having openings containing electrode sections, each section comprising a support carrying active material secured to said frame by a rigid union along the middle of its upper edge, but free at its ends, as set forth.

781,802. Valve and Valve Gear for Explosive Engines. William Barber, Brooklyn, N. Y., assignor to Ada S. Barber, Brooklyn, N. Y. Filed February 24, 1902. Serial No. 95,002.

Claim—1. In an explosion motor, the combination with an explosion chamber having an inlet orifice formed in the wall thereof, of a bushing secured in such inlet-orifice provided at one side with means for connecting the same with an explosive vapor supply pipe, a normally closed inlet valve located in such inlet orifice, and a removable plug secured in the bushing so as to close the outer end thereof and secure the valve in position in such manner that the valve may be removed without disturbance of the bushing upon removal of the plug, substantially as shown and described.

781,804. Lubricator. Edouard Berger, Jersey City, N. J. Filed December 24, 1903. Serial No. 186,456.

Claim—1. In a device of the kind described, the combination of an exteriorly-threaded receptacle, a tube communicating therewith to deliver lubricant to a bearing, a plunger, a flange on the plunger screw-threaded on its interior to engage the threads in the receptacle, a stem on the plunger, a pivoted yoke carried by the receptacle having a bearing for the plunger stem, and a spring-stop carried by the yoke to engage the flange of the plunger and hold the same in adjusted position, as set forth.

781,825. Automobile. Frederick W. Hedgeland, Chicago, Ill. Filed November 10, 1904. Serial No. 232,067.

Claim—1. The combination with the driving shaft and the driven member of an automobile, of a clutch actuated longitudinally by the shaft to positively drive the member in either direction, and to permit the driven member to revolve faster than the shaft in either direction.

781,854. Cooler. Richard Thomas, Bayonne, N. J. Filed March 16, 1904. Serial No. 198,348.

Claim—1. A cooler comprising, in combination, a series of closed cooling compartments, the top and bottom of which are composed of cooling plates, an injector operating in each compartment between said cooling plates and passages whereby said compartments are connected through said cooling plates, the passage in each plate being at a different angle from the passage in the other plates to form a progressive series of passages around the center of the cooler; said cooling plates being hollow and provided with connections for the circulation of a cooling fluid through the series.

781,889. Two-Cycle Motor. Ernst Korting, Kortingsdorf, Germany. Filed October 5, 1901. Serial No. 77,657.

Claim—1. In an internal combustion engine, the combination with the working cylinder, of a pump for air, a pump for gas, a pressure chamber connected with the cylinder of the gas pump, a mixing chamber connected with the working cylinder and the air pump and said pressure chamber, a valve for the admission of gas to the gas pump, a by-pass between the end of the cylinder of the gas pump and the pressure chamber, and a throttling device located in the by-pass and controlled by the governor, substantially as described.

781,894. Method of Vulcanizing Leather Covers to Rubber Tires. Arthur M. E. De Montureux, Paris, France. Filed November 7, 1904. Serial No. 231,797.

Claim—1. The method of uniting leather covers or armors to rubber tires, which consists in roughening the surface of the leather, degreasing it, and applying thereto a rubber solution, roughening the rubber, then applying to the surface so treated a solution consisting of tetrachlorid of carbon and protochlorid of sulphur and then uniting the parts, substantially as described.

"Motorcycles: How to Manage Them." Price $1. The Goodman Company, 154 Nassau Street, New York.

THE MITCHELL

The Car You Ought to Have at the Price You Ought to Pay.

Bristling With Original and Exclusive Features.

Are you posted regarding them?

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THE DUERR-WARD CO., No. 1787 Broadway, New York Distributors.

ARTHUR G. BENNETT, No. 20 Lake St., Chicago Distributor.

THE ACME IMPROVED 1905 MUFFLER.



Silent. Light Weight.
Simple in Construction.
Without Back-Pressure.

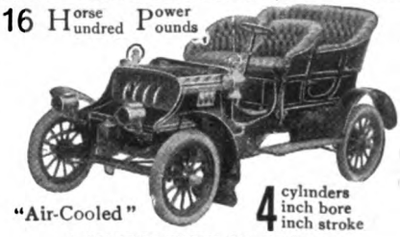
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STATIONARY.
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ACME MOTOR CAR & REPAIR CO.,
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Southern Agents: A. L. DYKE, 311 Pine St., St. Louis, Mo.
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1905—The Marion Car—1905

16 Horse Power
Hundred Pounds



"Air-Cooled" 4 cylinders inch bore inch stroke

A HIGH-GRADE TOURING CAR FOR $1,500.

Our Catalogue for the asking.

MARION MOTOR CAR CO.,
Indianapolis, Indiana

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Another Southern Rebellion Quelled.

A war that has been waging in New Orleans, La., between the chauffeurs of the sightseeing automobiles and the cabmen of that city has been settled, and, quite naturally, the chauffeurs were victorious. The dispute arose as to whether the chauffeurs or cabbies should take their stands in front of the St. Charles Hotel. A New Orleans city ordinance states that permission must be obtained from the tenant before a cab, carriage or automobile can be placed in front of any property. J. K. Ridgeley, general passenger agent of the Louisville & Nashville Railroad, which has its offices in the corner of the hotel building, gave the chauffeurs the preference, which resulted in several fights. The cabmen's association took the matter to court, and Judge Fogarty has decreed that the Jehus must not interfere with the chauffeurs.

A Benzine Bug Killer.

The only automobile sterilizer in the United States was given its official test last week at San Francisco. The foreword does not imply that this machine alluded to is one to sterilize automobiles—for they do not need it—but it is an automobile to kill germs.

The patent on the automobile sterilizer is owned by P. F. Dundon, of San Francisco. It weighs four tons, and uses oil, instead of gasolene, for fuel. The maximum speed is a fraction over five miles an hour, but the inventor claims it can climb hills as fast as it can travel on the level. The body of the car consists of an immense sterilizing chamber. During the test three pieces of soiled clothing, containing diphtheria, anthrax and strathylococci germs were put into the chamber, in which a vacuum was created and filled with formaline gas. The bacteria were destroyed immediately.

The reason the sterilizer is constructed on the plan of an automobile is because in case of an epidemic of some contagious disease in the city it could be moved quickly from house to house and the city disinfected within forty-eight hours.

Do Jehus Make Best Chauffeurs?

When Stephenson got his first railway working he advocated the employment of the stage coach drivers for the post of engineer, and recently at a lecture before a coachman's club in Dundee it was said that the latter made the best driver for the automobile. The lecturer was of the opinion that chauffeurs did not require to be engineers, but men with a good general knowledge of traffic. There seems to be a general opinion that the man of engineering experience is not always as careful of external appearances as is the coachman, whose work in this direction is mainly confined to cleaning the carriage work. These are points on which opinion may well differ radically, according to whether it is the coachman or the engineer who looks at it.

Left Him Only an Automobile.

It was somewhat disappointing to Louis Grover Vogel to discover that on his wife's death only an automobile was bequeathed him. He is now suing his wife's sister, contending that she appropriated more than her share of the estate. He values the estate at $20,000, while the deceased wife's sister insists that the property is not worth more than $1,500, and that he has by far the "lion's share" in the possession of the automobile.

Auto Traffic the Safest.

Statistics from Berlin show that the motor car is about the safest vehicle operating in the streets of Germany's imperial city. During the years 1901, 1902 and 1903 streetcars killed 83 persons in three years, while only one person was killed by a motor car. Heavy horse drawn vehicles caused 55 deaths, while cabs and such killed 17, and all other sorts of vehicles, 71.

During the three years 24 persons were severely hurt by motor cars, 532 by streetcars, 281 by cabs, 384 by heavy commercial cars and 498 by all other commercial cars. Streetcars were also responsible for the slight injury of 4,874 persons, while during the same period motor cars injured 47 persons.

Suggested D. T. for B. F's.

When the automobilists of Dorset, England, filed their complaint about carrying the letters B. F. on their license plates, an imaginative genius suggested taking the first and last letter in the name of the county. But the graduation from B. F. ("bloody fools") to "D. T.'s" was as indignantly rejected. However, the motorists' wrath has been calmed by having one letter changed, although they apparently cannot get away from "F."

The Up-to-Date French Cabby.

Realizing doubtless that Anglo-Saxons were his best customers, a Paris chauffeur has supplemented the words "English spoken" to the number on his lamp. In view of the not unusual difficulties experienced by English and Americans with the French "cabby," this man has made his number sufficiently prominent in order that satisfied customers may recommend 13,179, knowing that he has the best of intentions and is a polyglot.

The Lafayette Hotel,

BUFFALO, N. Y.

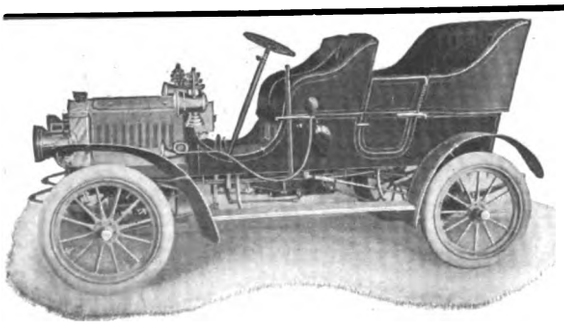
Entirely New. Superbly Furnished. 300 Rooms, nearly all with tub or shower baths. Grill Room, Palm Room and Buffet.

Rates for Rooms, $1.50 Per Day and upwards.

SPAULDING & OAKS, Managers.

You'll find the crowd all there during Buffalo Show Week.

Make your reservations early.



PIERCE-RACINE

4 MODELS

$750. $850. $1,100. $1,250.

PIERCE-RACINE Cars are good cars. *Guaranteed* for one year. They are fast and great hill climbers. Let us send you our printed matter which tells all about them. They are the best for the price.

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Cut your tire expenses in half,

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Michelin Tire American Agency,

Incorporated.

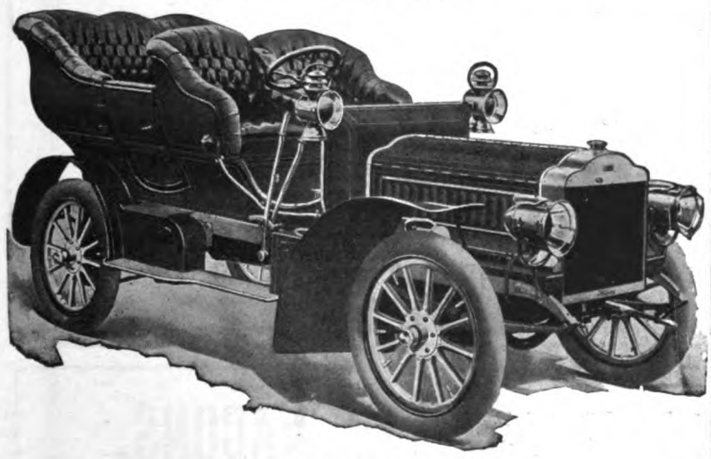
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Telephone, 4657 Madison,

E. D. WINANS, Gen'l Mgr.

DON'T YOU THINK SO?

The popular automobi e of to-day must possess something besides a handsome body and wheels that will go 'round! The Thomas "Flyer" touring car possesses such a number of safety devices. an i-friction, anti-wear, fool-proof and lubricating devices, that it takes a catalogue to tell it all. May we send one?



THOMAS 50 HORSE VICTORIA, $3,500.

At the New York, Philadelphia, Chicago and Detroit shows, the Thomas "Flyer" booth was the center of attraction. Such a line has never been offered before.

Thomas 40 Horse Touring Car (4 Cylinders),	**$3,000.**
Thomas 50 Horse Touring Car, with Victoria top,	**$3,500.**
Thomas 50 Horse Limousine,	**$4,500.**
Thomas 60 Horse Touring Phaeton (6 Cylinders),	**$6,000.**

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1210 Niagara Street, BUFFALO, N. Y.

Members of Association of Licensed Automobile Manufacturers.

MIDGLEY

PRESSED STEEL WHEELS.



Midgley Pressed Steel Wheels can always be depended upon.

Where personal safety is valued they are supreme.

The Autocar Company use them exclusively. Write for booklet giving full details.

Sole manufacturers of Dunlop Perfected Rims.

MIDGLEY MFG. CO.

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EASTERN REPRESENTATIVES.

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SIMPLICITY OF OPERATION.

Power in Proportion to Weight, Design and Workmanship.

These are the cardinal features that have placed the

ACME MOTOR CARS

where they are.

Type X, 16 H.P. Runabout, $1,000. **Type VIII, 30 H.P. Touring Car, $2,750.**

ACME MOTOR CAR COMPANY, Reading, Pa.

BOSTON MOTOR CO., 43 Columbus Ave., Boston, Mass. Mass. Distributors.

ACME MOTOR CAR CO. OF NEW YORK, 941-943 8th Ave., New York, N. Y. N. Y. and N. J. Distributors.

DEVLIN & CO. 1407 Michigan Ave., Chicago, Ill. Western Distributors.

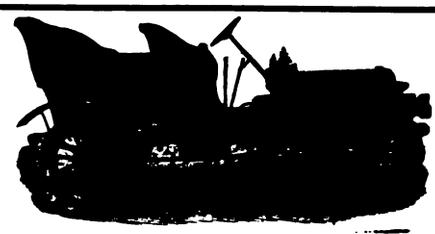
LIBERTY AUTOMOBILE CO., 205 Shady Avenue, Pittsburg, Pa.

SOUTHERN AUTOMOBILE CO., Atlanta, Georgia.

J. W. MEARS, 9 Ocean Parkway, Brooklyn, N. Y.

A WORD PICTURE OF THE YALE FOR 1905. $1,000.00.

SIDE ENTRANCE, $1,100.00.



Imagine to yourself the prettiest touraround that ever dashed down a road—a flash of gold and blue, whizzing by with no more noise than a mere musical whirring of the wheels.

Try to conceive a car so filled with power that it is like a living thing; and so instantaneously responsive that it can be controlled by a touch of the thumb and index finger. When you've formed this mental impression you've only begun to get an unexaggerated notion of the thousand dollar Yale for 1905.

The new double cylinder Yale weighs only 1400 pounds, with over a full ounce of continuous power for every pound. Seats four and even five and takes the meanest hills at high speed. You mustn't even think of considering any other car at anywhere near the price before you've read, heard and seen more of the thousand dollar Yale for 1905.

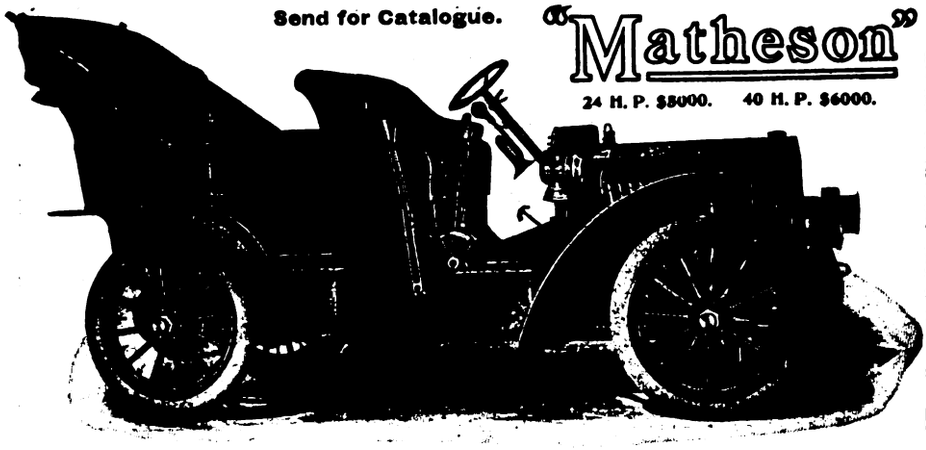
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"Matheson"

24 H. P. $5000. 40 H. P. $6000.



"America's Finest Motor Car."

CHARACTERISTIC FEATURES.

Self-starting from the seat.
Practically Noiseless.
Absence of Vibration.
Four-cylinder Vertical Engine.
Valves, in the head.
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Side Entrance.
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Long Life—insured by using greater factors of safety in every vital part than ordinarily employed.
Speed—Guaranteed 40 to 60 miles an hour, according to H. P. and gear.

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STANDARD PARTS FOR POWER TRUCKS AND WAGONS.

The marked economy of power wagons for delivery, express and truck service, and their superior reliability when in reasonably intelligent hands, is so well established that those who are conversant with the facts cannot fail to see that power wagons are rapidly beginning to supersede horse service.

PARTS WE SUPPLY:

STEERING GEAR, COMPLETE, CHAINS, COUNTERSHAFT AND REDUCTION GEARS, FRONT AXLES, COMPLETE, SPROCKETS, COUNTERSHAFT BRAKES, HUB BRAKES, DISTANCE RODS, MOTOR HANGERS, ELECTRIC MOTORS, CONTROLLERS AND ACCOMPANYING DETAILS.

Send for Catalogs Nos. 2, 3 and 8. Touring Car Parts, Catalogs 6, 7, 8 and 9.

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Selling Agent: HAYDEN EAMES, American Trust Building, Cleveland.

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Suit Against Michelin Tires

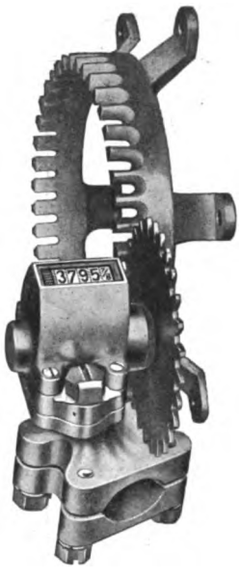
We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
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India Rubber Co.
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Veeder

ODOMETERS FOR MOTOR CARS

will be on exhibition at our spaces at New York, Chicago, Detroit, Cleveland and Boston, where we shall be very glad to talk with manufacturers of cars concerning the special discount we make to those who equip their output with Veeder Odometers.

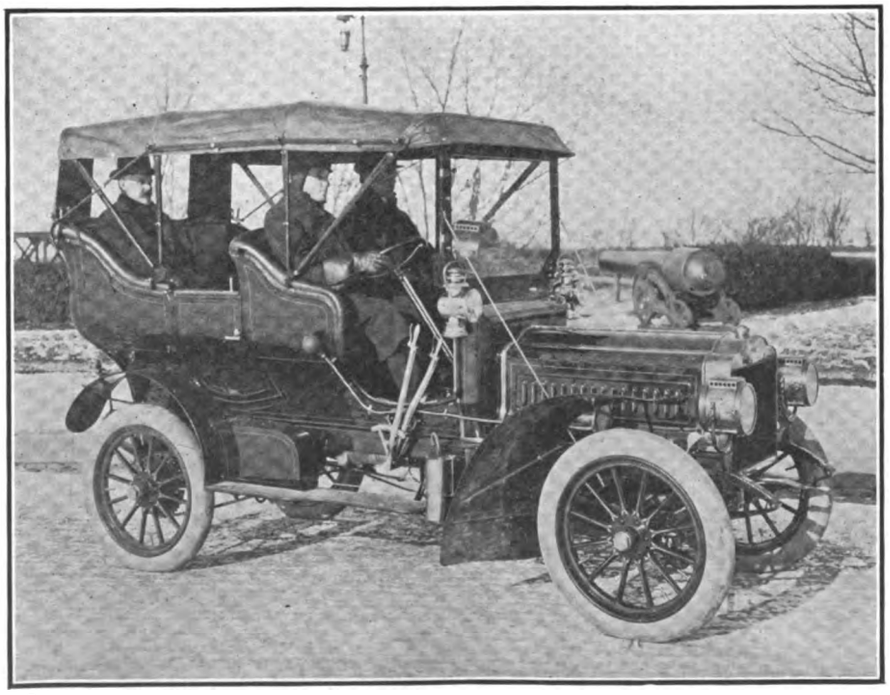
Dealers and jobbers are likewise invited to drop in at our booths to discuss the sale of Veeder Odometers for this year.

Automobile owners who wish to see the odometers in actual operation should feel perfectly free to come in and ask all the questions they choose. That is what we are there for.

THE VEEDER MFG. CO., 26 Sargeant Street, Hartford. Conn.

Cyclometers, Odometers, Tachometers, Counters and Fine Castings.

COL. SPRAGUE'S CANOPIES.



A Sprague Extension Top on a "Thomas Flyer"; recognized as the correct thing in tops.

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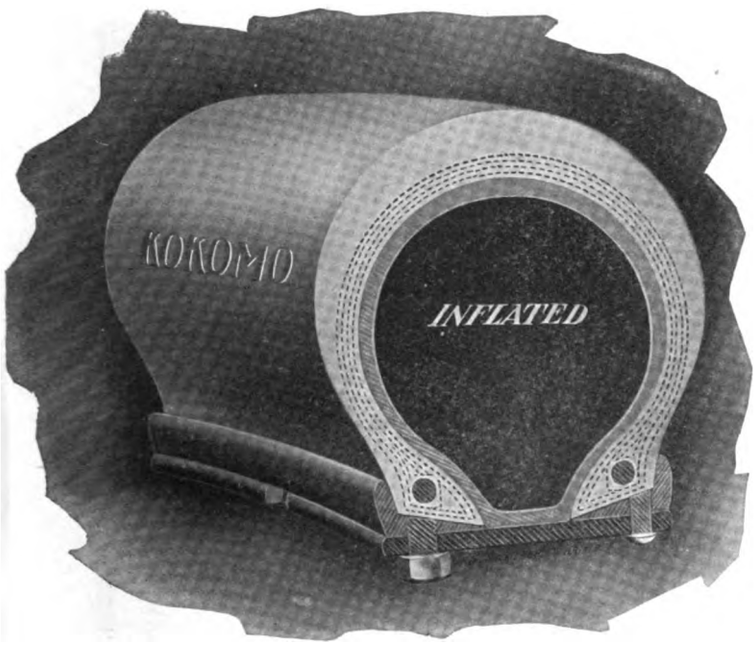
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— Tire Maintenance —

— Solved at Last —

and by the

Kokomo Mechanically-attached Tire





"Creeping," "Crimping," "Rolling" and Blow Outs" Impossible

The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim itself.

Attached and Detached in a Jiffy with a Small Wrench

No Bothersome and Unsightly Lugs Projecting through rim to damage the inner tube and no metal valve used

Side Walls as Strong and Substantial as the Trade

☞ More cushioning or air space to sectional diameter than any other tire of same diameter, permitting the use of a smaller tire—a saving to purchasers.

Prices and other particulars on application

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DOUBLE SERVICE.

THE APPLE AUTOMATIC SPARKER.

has a two-fold value to every user of gas power for Automobile, Launch or Stationery Engine.

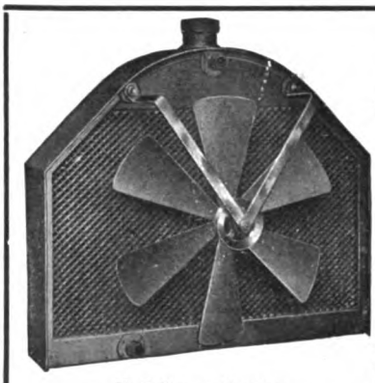
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Besides this it gives ample power for three electric lights, whether engine is running or standing still

Easily attached to any engine now using batteries. Our new gear-driven system is worthy of your attention.

Write us for anything pertaining to ignition. We make over eighty articles for ignition purposes. THE DAYTON ELECTRICAL MFG. CO., 91 BEAVER BLDG., DAYTON, OHIO

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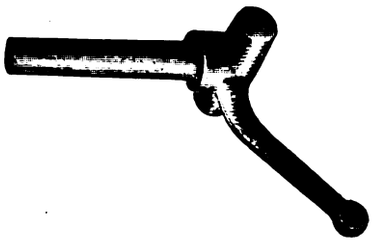
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Any Design or Style of Cooler Made to Order.

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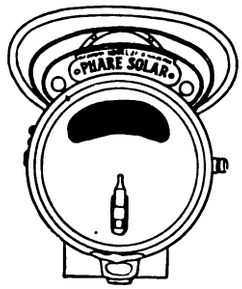


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SOLAR LAMPS

in the first rank. You who have used them know this, you who have not should be convinced by this Award. You, Mr. Dealer, should insist upon them as equipment, for your customers will demand Solars. No lamp troubles with Solars.

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will help you understand many things about motors which may now seem hard of understanding.

108 Pages. 50 Cents Per Copy.

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The **VOLIER DRACON:** Special prices to jobbers and dealers who come and see us at the show. This is the horn proposition of the year and you can learn more about it by coming up and asking a few questions than you could by reading all night.

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YOU CAN SEE YOUR FINISH
WHEN YOU USE
FISK'S AUTO-CAR SOAP

If an automobile is worth anything at all, it's worth keeping clean. Fisk's Auto-Car Soap does it—



Cleans a dirty car as nothing else does, preserves the finish and keeps it looking new with all its original lustre. Re-orders from those who have tried it prove its worth.

Put up in 5 lb. air-tight tin pails. Price $1.00. (Express prepaid to points as far West as and including Chicago, Ill.) Also put up in barrels and half barrels.

A necessity to every individual owner.

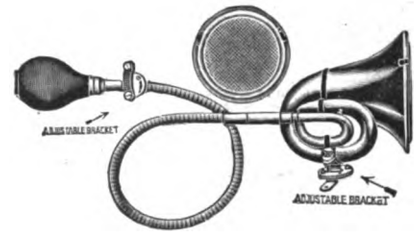
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OUR PROPOSITION IS INTERESTING.

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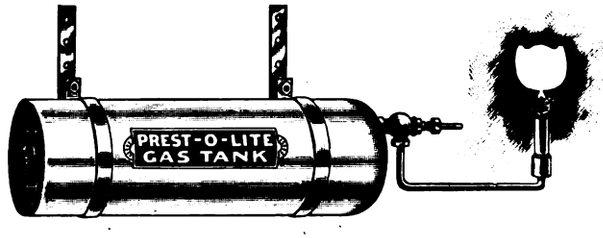
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The new system of acetylene lighting for automobiles and launches. More than 1,000 Prest-o-Lite Tanks sold since September 1st. More than 100 of the best agents in America have placed orders for Prestolite Tanks.

TEN THOUSAND Tanks will be sold in 1905. The wide-awake dealers are signing up agencies now. Write us for catalogue and full information.

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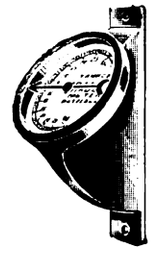
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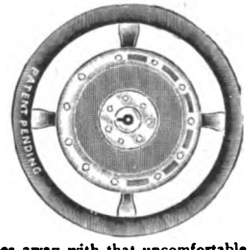
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YANKEE GRADE-METER
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Positively accurate, only dash grade-meter in the world. Easily read from the seat All grades to 35 per cent up or down.

YANKEE NON-VIBRATING STEERING WHEEL
PRICE $10.00



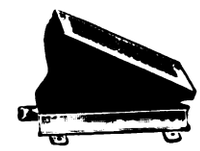
Does away with that uncomfortable feeling in the arms caused by vibrating wheels on long tours. Central diaphragm—made of flexible leather and rubber. Has greater tensile strength for steering purposes than any other wheel

YANKEE SILENT AUTOMATIC MUFFLER
PRICE $10.00



Composed of 24 opposed disk radiators on end of exhaust pipe. Burnt gas discharged through thin outer edge of radiator No back pressure because point of discharge greater than bore of exhaust pipe Self cleaning and noiseless.

FOOT BELLOWS FOR HORN
PRICE $3.00



Will give louder blast and outwear a dozen bulbs.

We make 30 other good selling Auto specialties.

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Discount to Jobbers, Manufacturers and Dealers.

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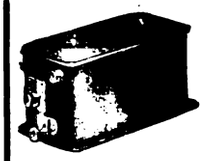
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RAIN APRONS, ENGINE CASE, CHAIN BOOT

Also Rubber Mats, Hampers, Lamps, Horns, Clothing, and everything else required by Automobilists

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For all purposes—Single, Double, Triple and Quadruple for Stationary Engines and Automobiles. Guaranteed in every particular. Fine Vibrator.

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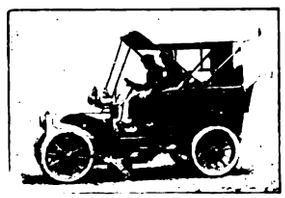
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THE F. B. STEARNS CO.,
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BRISCOE RADIATORS
on your car

To Operators of Steam Cars:

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CHEAP MATERIALS.

In the South, Manufacturers of all kinds are in position to Assemble their Raw Materials Cheaply, while Exceptional Transportation Facilities place them in touch with all the Great Markets, North, East and West.

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The Baldwin Chain Company
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Measures the Oil for the Bearings, and Always Sends it there.

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(SOLVAY PROCESS CO.'S)

will stand 30° below Zero Fahr. without Freezing.

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The Most Satisfactory Ignition Plug in the World at any Price.

$1.50; $1.75; $2.00; $3.00; $5.00.

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For information as to rates, hotels and boarding houses, address nearest Big Four Agent, or

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Enclosed find $2.00 for which enter my subscription to

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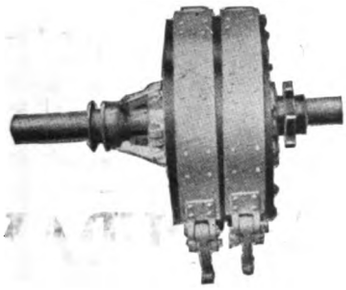
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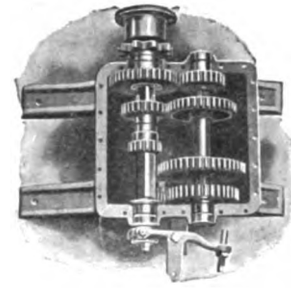
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Two Speeds and Reverse.

OUR SPECIALTY.

SLIDE GEAR.
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Transmission Gears



We have been manufacturing these gears for the large trade for three years, consequently in buying them you buy no experiments. Our prices are interesting. Write us.

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Kingston Carburetor.

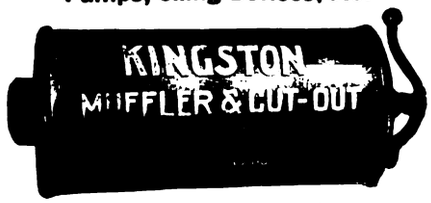
OVER 24,000 IN USE.

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Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

Pat. Jan. 29, 1901.



An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
THE ADAMS COMPANY, Dubuque, Iowa.

DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 28 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

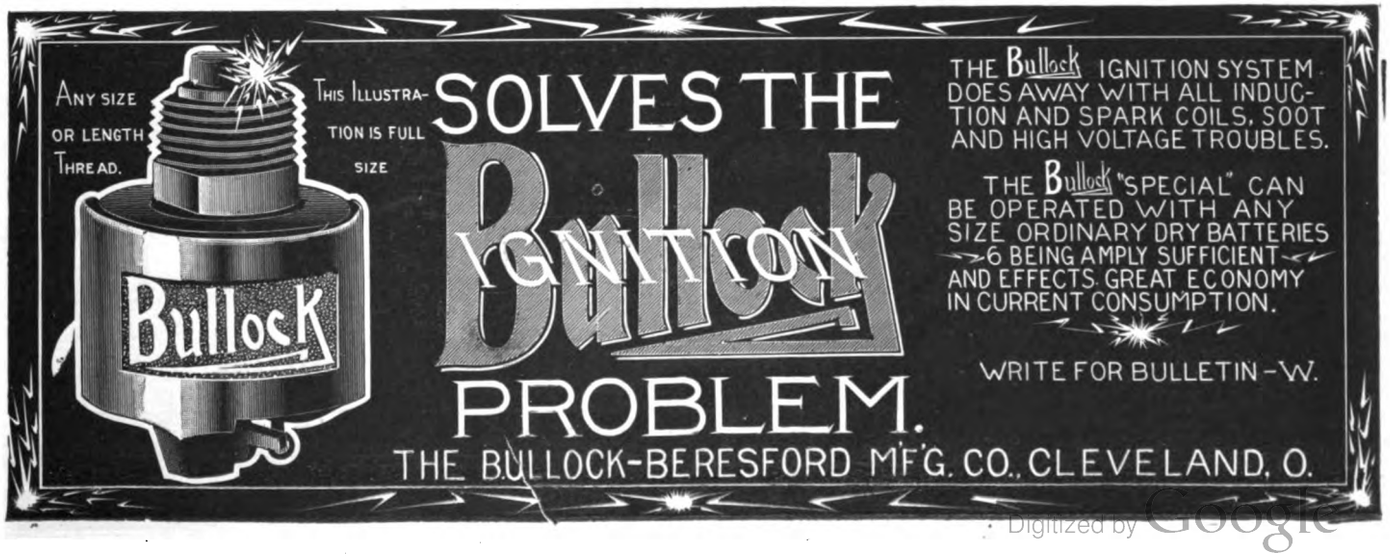
The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

GRAY AND DAVIS

"Makers of Smart Automobile Lamps."

Be Sure YOUR CAR is Equipped With Them. **AMESBURY, MASS.**



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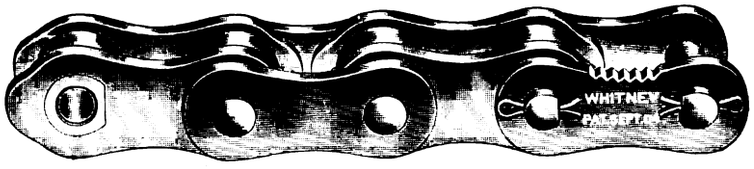
These are **"WHITNEY" STANDARDS** for Roller Chains.

PITCH.	Diameter of Roll.
1 in.	5/8 in.
1¼ in.	¾ in.
1½ in.	7/8 in.
1¾ in.	1 in.
2 in.	1⅛ in.

The PITCH SIZES and DIAMETERS advance uniformly in perfect proportion.

They have broken all records for efficiency, and have been adopted for most of the leading American Cars, including

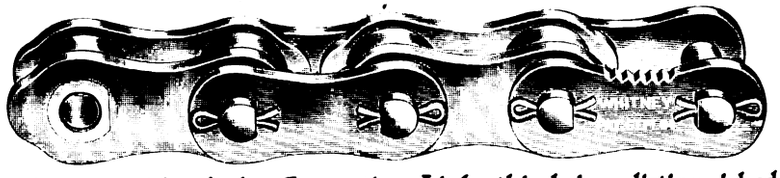
"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "BRAMWELL" "CADILLAC" "COLUMBIA" "CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN" "GROUT" "GAETH" "GIBBS" HARTFORD MOTOR STREET SWEEPER" "KNOX" "LENAWEE" "MITCHELL" "MOLINE" "MATHESON" "MANHATTAN" "OLDS" "POPE-HARTFORD" "PIERCE-RACINE" "PRESCOTT" "QUEEN" "RAMBLER" "STEARNS" "SOMMER" "SNELL" "THOMAS 50 & 60 H. P." "TOURIST" "WAYNE" "WESTERN ELECTRIC"



"Whitney" Roller Chain

RIVETED TYPE.

All links on both sides are Riveted, with exception of one Connecting Link shown.



"Whitney" Roller Chain

COTTER DETACHABLE TYPE.

All links on one side are Riveted and all links on opposite side are Detachable. One link only is considered the Connecting Link, this being distinguished from the others by notches in the top surface.

PITCH.	Diameter of Roll.
1 in.	9-16 in.
1¼ in.	5/8 in.
1½ in.	¾ in.
1¾ in.	1 in.
2 in	1⅛ in.

These are the OLD or COMPETING Standards.

The PITCH SIZES advance uniformly, but the DIAMETERS are irregular and not in perfect proportion.

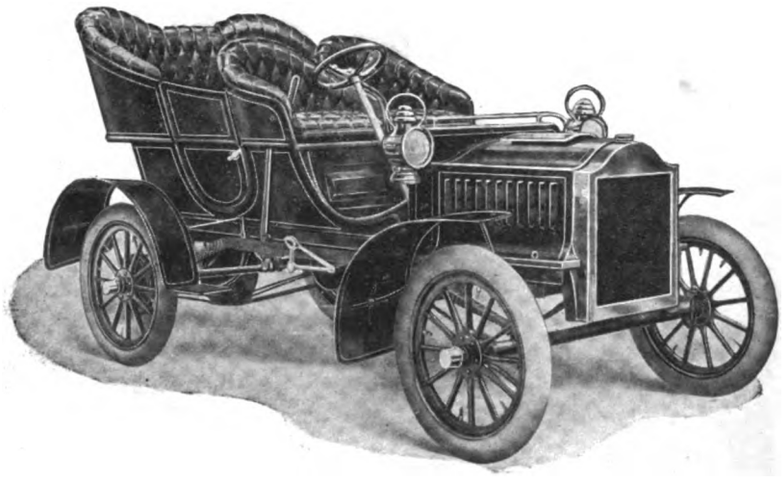
All Chain Manufacturers have adopted "WHITNEY" Standards for these new sizes 1¾ in. and 2 in pitch.

THE WHITNEY MFG. CO.

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THE LEADER OF LIGHT TOURING CARS.

2 Cylinder. 20 H. P. Price, $1400.

The embodiment of style, quality and up-to-date features. These cars are built on lines of strength which guarantee endurance and satisfactory service. You get "Scripture measure" when you buy an Oldsmobile.

7 H. P. Standard Runabout,	**$650**	**20 H. P. Touring Car,**	**$1400**
7 H. P. Touring Runabout,	**$750**	**10 H. P. Light Delivery Car,**	**$1000**
10 H. P. Light Tonneau,	**$950**	**16 H. P. Heavy Delivery Car,**	**$2000**

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30 AND 40 HORSE POWER TOURING CARS.

A Few Good Cars for Those Who Want the Best.

Prompt Dollvery on 30 and 40 Horse Power Four Oylinder Oars.

NO TRADE DEALS CONSIDERED.

THE OLDEST MAKERS IN AMERICA.

THE BEST CARS IN THE WORLD.

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INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

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ST.LOUIS, MO., Feb.16,1905

Locomobile Co.

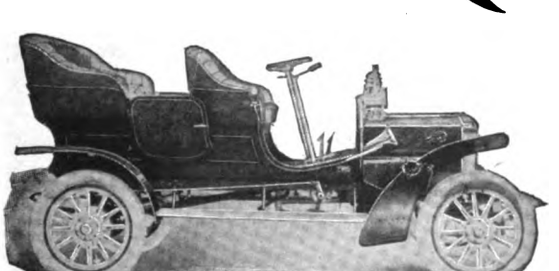
Chief of St.Louis Fire Department has selected Locomobile Model "E" after careful inspection and trial of various makes.

Congratulate you. When can we expect delivery?

CAPEN MOTOR CAR CO.

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FEB 16 1905
The Locomobile Co., OF AMERICA.

NORTHERN



Two-passenger NORTHERN Touring Car with rear luggage platform; 18 h.p.; 100 inch wheel base; 4 inch tires. Price $1500.

NORTHERN construction is absolutely unique. It stands apart. It is a marvel of simplicity, compactness and strength.

The word "simplicity" has been much abused by automobile manufacturers.

When used in connection with NORTHERN machinery, it means **exactly** what it says. No other car made demonstrates to such a degree the merit of real simplicity.

All machinery is instantly accessible. There is only one universal joint. There are no belts, chains, or gaskets. No strut rods or truss rods. No confusing array of wires, etc. Power is applied **direct** to rear axle.

The sturdy NORTHERN Runabout. 7 h.p. **Strong**, speedy and reliable. The handsomest and best finished machine of its class. Now sells for $650.

Are you interested in cars that bring the buyers "no expense but the gasoline?" Write for Catalogue.

NORTHERN MANUFACTURING COMPANY,

DETROIT, MICH., U.S.A.

Member A. L. A. M.

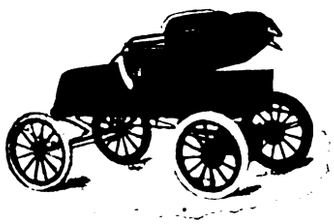
PETER FOGARTY, 142 West 38th St., NEW YORK CITY AGENT.

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POPE Waverley ELECTRICS

A very prominent man who owns a large number of motor cars of almost every conceivable size, style and type, recently summed up the whole situation in the following words: "The Electric is pre-eminently THE automobile for all general utility purposes. Were it necessary for me to sell all but one of the cars I own, I would retain the Pope-Waverley Electric."



MODEL 36.

MODEL 36, Speed Road Wagon. Price, without top $900, with top $950. Our aim has been to so design and equip it so that it will travel more rapidly than the regulation electric carriage. We have succeeded in producing a carriage that will do 18 miles an hour.

MODEL 26-C, COUPE TOP CHELSEA. Price $1,450. Coupe top is easily removed, making an open carriage for summer. This is particularly an all the year round automobile.

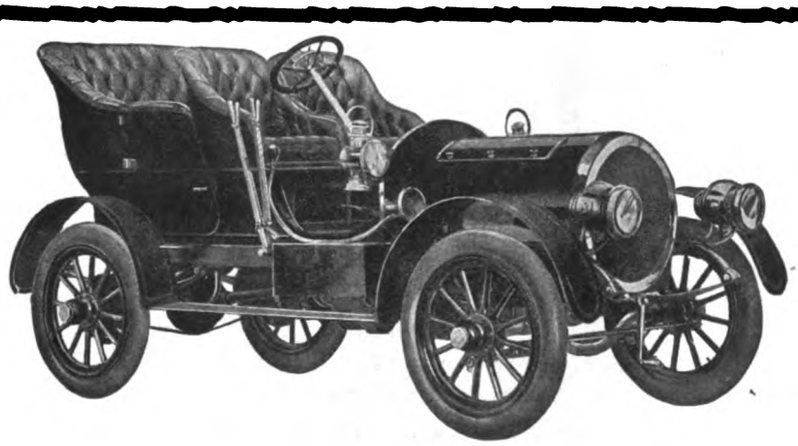


MODEL 26-C.

No matter what your wants are in an electric motor car, we believe we can supply them. We make Delivery Wagons, Trucks on specifications, and many others not shown here.

WRITE FOR COMPLETE CATALOGUE.

POPE MOTOR CAR CO., **Indianapolis, Ind.**



NATIONAL, MODEL C, PRICE, $2,500.

NATIONAL

Model "C"

"GOES THE ROUTE."

With NATIONALS You Lead—
Others Follow.

Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
Five lamps, Generator and horn.
Tires, 34 x 4. Positive oiling.
Luxuriously upholstered in leather.
Governor. Duplex throttle control.
Four cylinder 4¼ x 5 vertical.
Bevel gear drive.

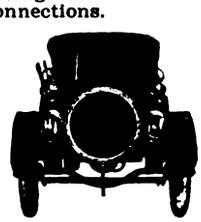
Double ball bearing slide gear transmission—direct on high.
Hardened steel gears.
Gear driven commutator.
Rear wheels revolve on double ball bearings on outside axle tube.
All weight taken off inner axle and differential.
Spherical drive case.
Internal expanding metal to metal brakes.
Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905.

National Motor Vehicle Co.,

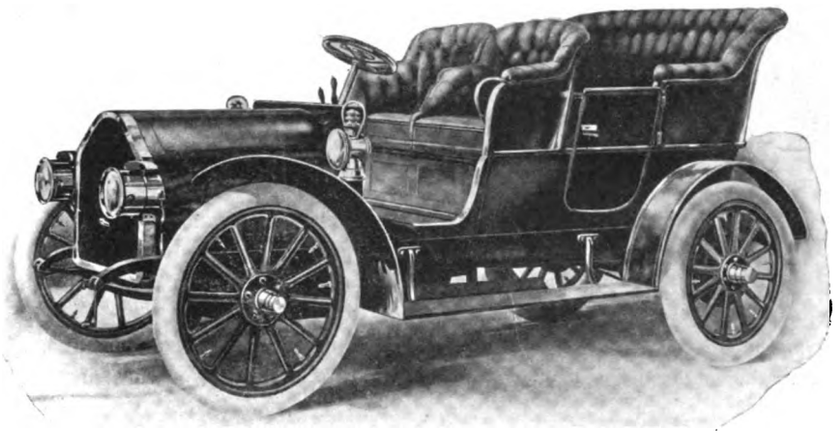
1007 E. Twenty-Second St., Indianapolis, Ind.

WRITE NOW.



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TWO ORIENT BEAUTIES.



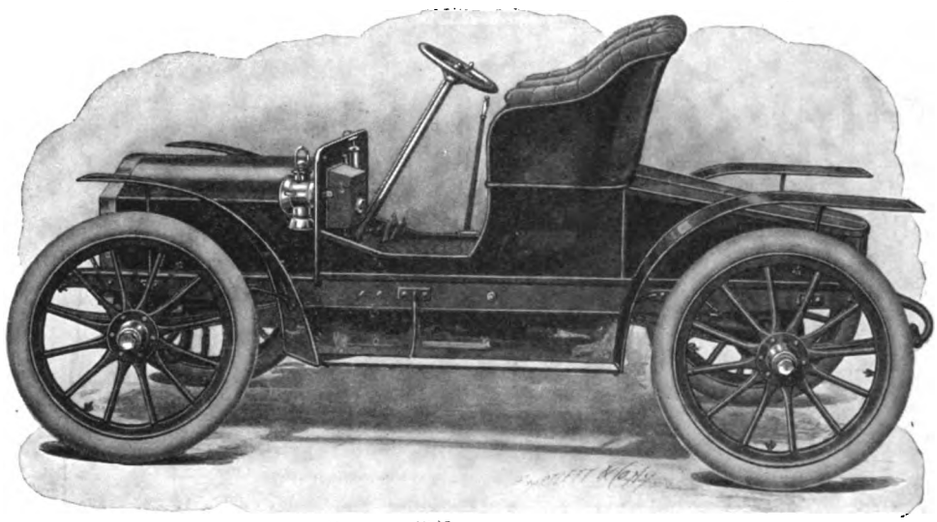
ORIENT MODEL DE LUXE TOURING CAR. 20 H. P. Price $2250.

For the last two or three weeks we have kept the wires pretty hot telling you about our new Touring Runabout with the semi-racing body and the improvements we are putting on the 1905 Buckboards. This week we want to get back to the Model de Luxe long enough to remind you that there is no other car in America under $4,000 or $5,000 that even approaches it in beauty of design and luxury and elegance of finish and upholstering.

It sums up the entire situation to say that the Model de Luxe Orient is as fine a car as any one really has use for. Its 20 H. P. positive air-cooled motor of the 4-cylinder vertical fore-and-aft type is the finest piece of air-cooled mechanism that has ever been put into an automobile. It will drive the car 35 miles an hour and is so simple in operation that any owner can take his car out with the reasonable certainty that no complications are going to arise which will be beyond his understanding.

Just A Word About Model E.

THE TOURING RUNABOUT AT $1500.



ORIENT TOURING RUNABOUT, with semi-racing body. 16 H. P. Price $1500.

This is the semi-racing model—very light and fast, capable of doing 40 miles an hour easily. It has exactly the same engineering features as our Model de Luxe, and in design easily surpasses any other American Runabout, having the massive, powerful, clean-cut lines of the finest French Cars. It is furnished with detachable Tonneau for $1650.

ORIENT TOURING CARS

Model E, Touring Runabout (semi-racing body), 16 H.-P..	$1500
Model E, with detachable Tonneau, 16 H. P.	1650
Model F, Light Touring Car, with Tonneau, 16 H.-P.....	1650
Model G, Touring Car, 20 H.-P.....	2000
Model de Luxe, Touring Car, 20 H.-P.....	2250

ORIENT BUCKBOARD LINE

Buckboard, Model A, 4 H.-P.....	$375
Surrey, Model B, 4 H.-P.....	450
Runabout, Model C, 4 H.-P.....	475
Tonneau, Model D, 4 H.-P.....	525

WALTHAM MANUFACTURING COMPANY,

Members of Association of Licensed Automobile Manufacturers.

Factory: WALTHAM, MASS. **General Sales Offices: 44 Broad St., NEW YORK**

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"The Maxwell"

There is not one complicated detail throughout "Maxwell" construction. The number of parts has been cut down to a minimum, and each part has been treated as a special problem and carefully worked out to perfection. It is fundamentally a car easy to explain, easy to understand and easy to operate.

The owner of a "Maxwell" is absolutely sure of two things.

First, that no car in the market AT ANY PRICE is more reliable than his, and, second, that he owns the one car before the public to-day in which, through its rare simplicity of construction, there is nothing to do but ride.

The "MAXWELL" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and accessible in every part. They have Bevel Gear Drive. METAL BODIES. Transmission Case and Crank Shaft cast in one Aluminum casting. "Perfectly simple and simply perfect."

16 H. P. TOURING CAR, $1400. 8 H. P. TOURABOUT, $750.

MAXWELL-BRISCOE MOTOR CO.
TARRYTOWN, N. Y.
New York City Salesroom, 317 W. 59th Street.

Two Impulses with Every Revolution

This is the famous Elmore Pathfinder, which has demonstrated beyond a doubt the superiority of the two-cycle engine over the four-cycle engine. The most significant feature of the American Automobile situation to-day is the complete triumph of this impulse-every-revolution idea, or, with two cylinders, two impulses every revolution, as exemplified in the Elmore. That the Elmore does produce a constant torque; that it does utilize every particle of power and put a stop to waste energy; that it will take the steepest hill or roughest road at high speed, and that it has the most reliable self-starting engine in the world—for each and every one of these claims overwhelming proof has been produced.

The whole trend of expert and popular opinion is rapidly being directed toward the two-cycle engine.

You owe it to yourself to see this car, which will astonish you, not only by its fine appearance, but by its excess power and its extraordinary control on the high speed.

Send for our full line of literature, the booklet illustrating the 6,000-mile trip, our catalogue, explanation of our engine, and the opinions of people who have used our cars, all sent free, or, if you wish, we will send a 10x12 photograph of the Pathnder on receipt of 10 cents in stamps.

ELMORE MANUFACTURING COMPANY,

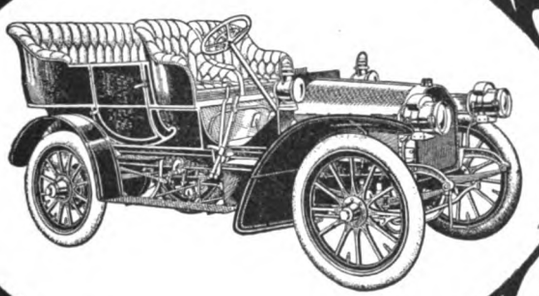
1104 Amanda Street, CLYDE, OHIO.

Members of Association of Licensed Automobile Manufacturers.

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Peerless

The Car of Achievement



Peerless Motors

have valves on top of cylinder instead of on the sides as other motors.

RESULT IS

a smaller combustion chamber—explosive force is directed principally on top of cylinder head—no force is wasted on offset posts. Hence there is greater motor efficiency.

1905 PRICES

24 H.P.	30 H.P.	35 H.P.	60 H.P.
$3,200	$3,750	$4.000	$6,000

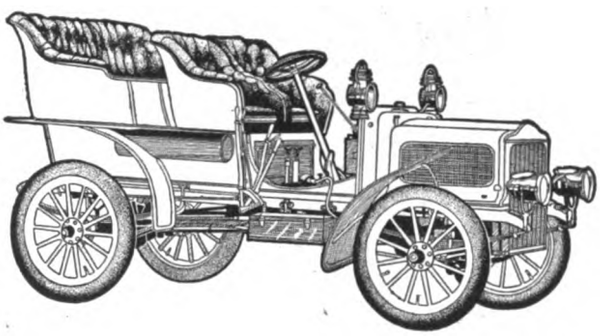
Send for Catalogue now ready.

PEERLESS MOTOR CAR CO.
CLEVELAND, OHIO.
Member A. L. A. M.

L. S. & B. Co. CLEV'D.

The INCOMPARABLE WHITE

THE CAR FOR SERVICE



Choosing an Automobile

is a difficult proposition if the purchaser relies only on the appearance of the various models of machines as they stand in the salesrooms, and as they perform on short demonstration trips.

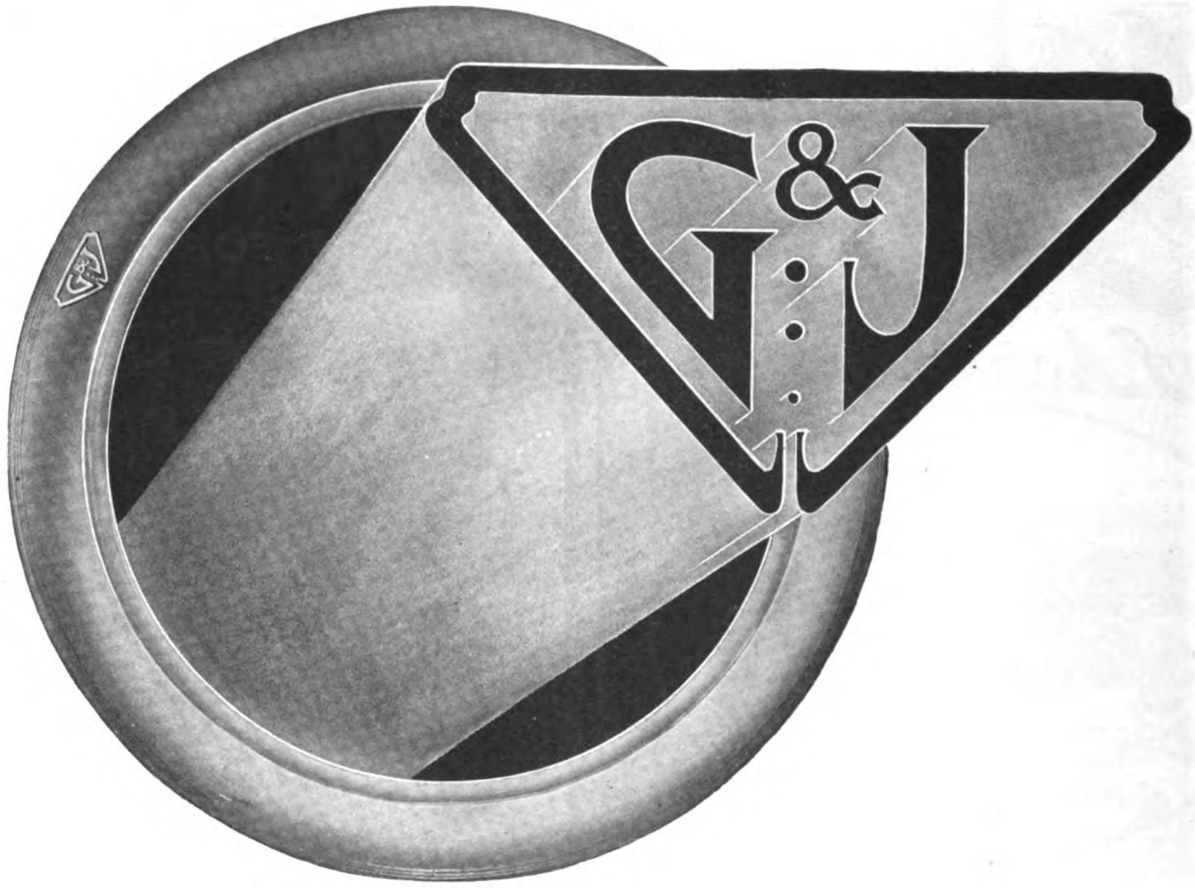
When Past Performances are Considered,

selection narrows down to the WHITE—for four years winner in all reliability and endurance contests, as well as in many speed and hill climbs.

Write us for Bulletin No. 8, which summarizes four years of automobile history.

WHITE SEWING MACHINE COMPANY,
CLEVELAND, OHIO.

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The Only Clincher Tires that Don't Require Lugs.

Where wheels have been drilled for lugs, we will supply free, with tire orders, special brass capped bolts to fill the lug holes, to prevent moisture from getting into the tires.

All G & J Tires are fitted with flaps, giving a perfect seating to the Tube. No danger of cutting tube on lugs, or pinching between edges of case.

All G & J Tires are of thread fabric construction—giving the greatest resilience and durability to the tires: and making them easy to handle. The G & J Tire is the easiest tire in the world to remove from and place on the rim.

The 1905 G & J Tires embody all the features of

THE PERFECT TIRE.

G & J TIRE CO.

Chicago	Indianapolis	Detroit
429 Wabash Ave.	549-625 E. Georgia St.	247 Jefferson Ave.

Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded

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"STEVENS-DURYEA" New 20 Horsepower 4 Cylinder TOURING CAR.

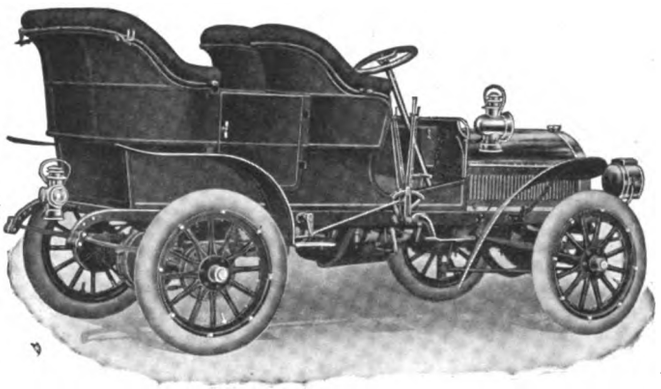
MODEL R.

GREAT STRENGTH

HIGH POWER

LIGHT WEIGHT

are three vital essentials perfectly combined in this latest product.



SALIENT FEATURES:

Aluminum Body,
Side Entrance Tonneau,
Capacity 5 persons,
Pressed Steel Frame,
Three Speeds and Reverse,
Three Brakes,
Four Individual Cylinders,
Bevel Gear Drive,
Water Cooling.
Weight, 1650 lbs.

PRICE, $2,500.

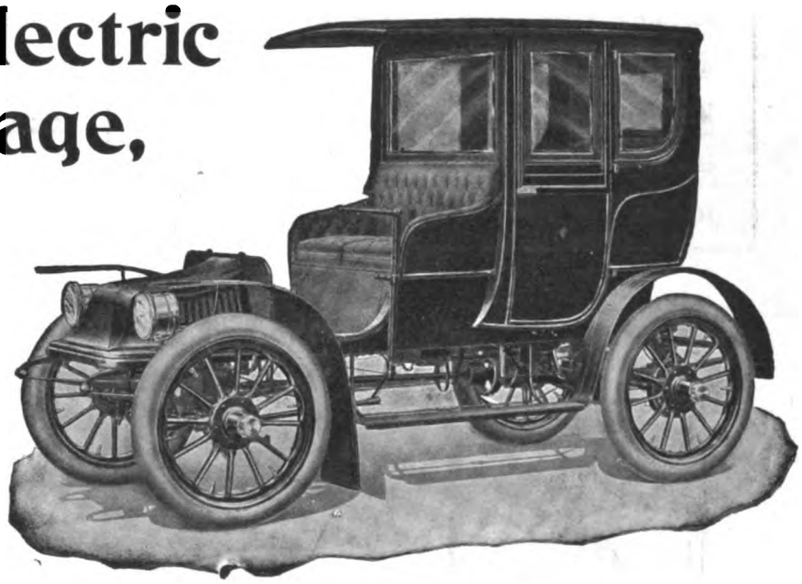
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AGENTS:—WRITE FOR SPECIAL PROPOSITION ON UNOCCUPIED TERRITORY.

J. STEVENS ARMS & TOOL COMPANY,
690 Main Street,
CHICOPEE FALLS, MASS., U. S. A.
Members Association of Licensed Automobile Manufacturers.

THE BAKER ELECTRIC

The Baker Electric Depot Carriage,



The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES,
SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.

THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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Merely a Matter of Choice

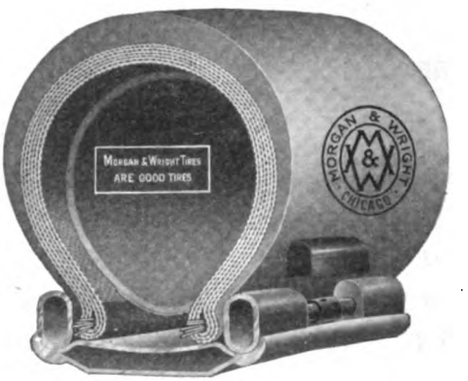
"Every man to his way of thinking."



The Morgan & Wright Clincher

has backed up every good thing we have said about it. It has given the kind of every-day, every-mile service that tire-users everywhere are looking for. Nothing but the best-grade, most durable stock enters into its construction, and it is made by experts who know how to use such material. Its best recommendation is not what we guarantee to do, but what we can prove it has done. Used in connection with our recently-invented tire tools, it is an extremely easy tire to manipulate.

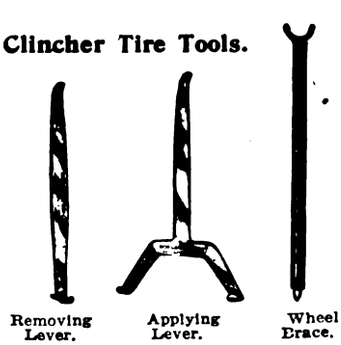
MORGAN & WRIGHT TIRES
ARE GOOD TIRES



The Perfected Dunlop Detachable

is generally admitted to be the most satisfactory mechanically-fastened tire on the market. The simple, effective method of its construction strongly recommends it to those who prefer this type of tire; and in addition (which is highly important to the prospective tire-buyer) it has every advantage which experience gives to prove that the principle of its construction is correct. It occupies first place among mechanically-fastened tires because it belongs there. Made of A1 stock all the way through.

Clincher Tire Tools.

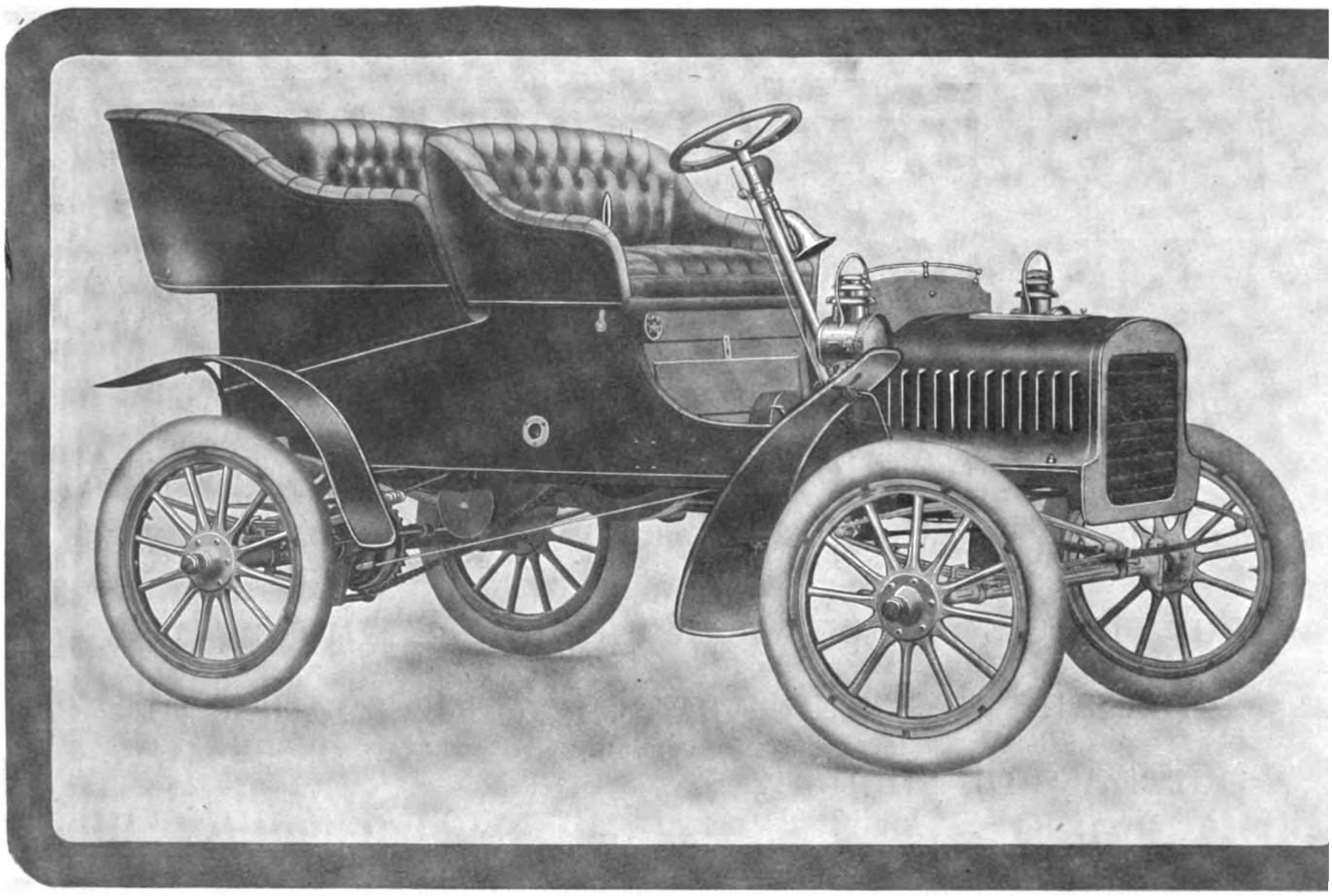


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Morgan & Wright, Chicago

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SAN FRANCISCO SYRACUSE

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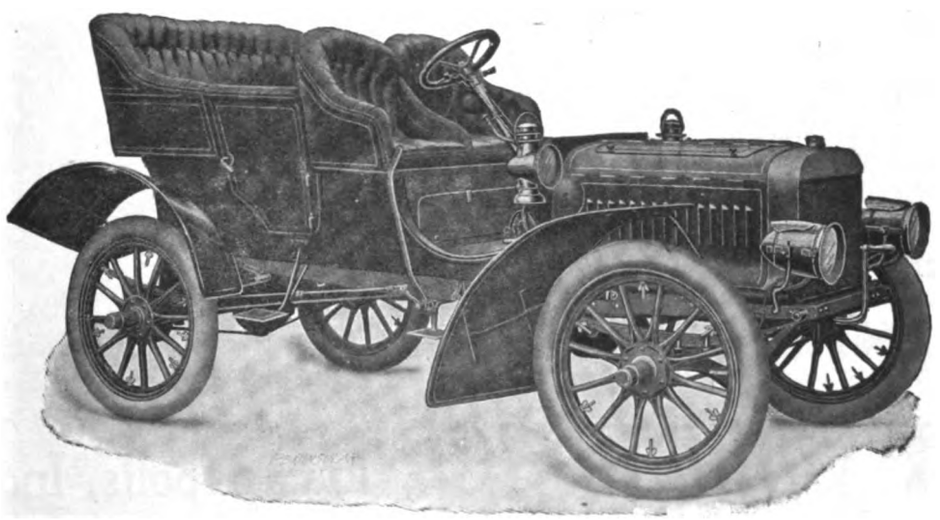


FORD MODEL C. PRICE $950.00

Don't Experiment— Just Buy a FORD.

Send for detailed description of

Model "C" Tonneau Car, 1250 lbs., 2 cylinder opposed, price	$950.00
Model "F" Side Entrance Tonneau, weight 1400 lbs., 2 cylinder opposed, price	$1200.00
Model "B" 4 cylinder, vertical, weight 1700 lbs., side entrance tonneau, price	$2000.00
Delivery Car, weight 1350 lbs., 2 cylinder opposed, price	$950.00



FORD MODEL B. PRICE $2000.00.

Full particulars about agencies sent on request.

Ford Motor Company,

DETROIT, MICH.

Canadian trade supplied by **The Ford Motor Co. of Canada, Ltd.,** Walkerville, Ontario.

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SUIT AGAINST PENNSYLVANIA TIRES.

We beg to notify the trade that we have commenced suit against the Pennsylvania Rubber Co., Jeannette, Pa., for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

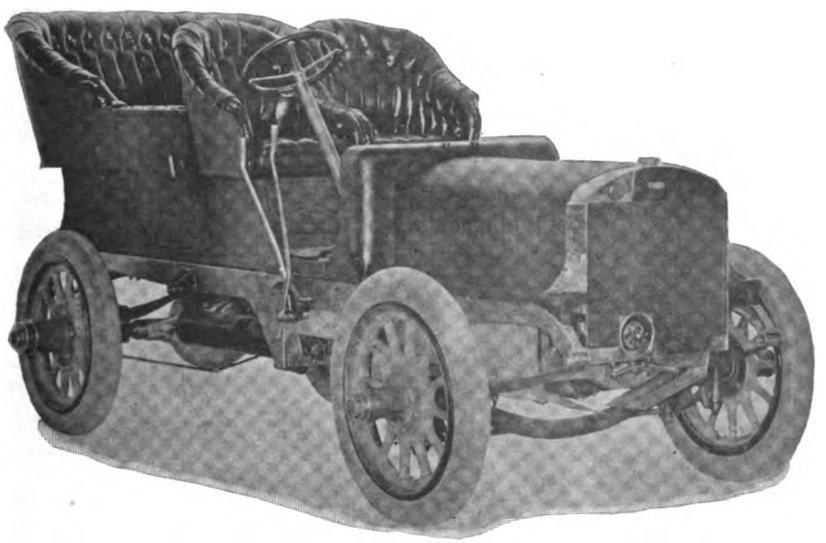
The following concerns are operating licenses granted by us:

THE HARTFORD RUBBER WORKS CO.
MORGAN & WRIGHT.
INDIA RUBBER CO.
B. F. GOODRICH CO.
DIAMOND RUBBER CO.
FISK RUBBER CO.
GOODYEAR TIRE AND RUBBER CO.
INTERNATIONAL AUTOMOBILE & VEHICLE TIRE CO.
CONTINENTAL CAOUTCHOUC CO.

THE G & J TIRE CO., Indianapolis, Ind.

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OUR LINE



Four Cylinder Cadillac Touring Car. Price, $2,800. (Without Lamps).

for the year is motor car perfection. It is the result of careful thought and intelligent effort. We made a GOOD BEGINNNING—and we have now a line of cars second to none. In 1903 we brought out our Model A—single cylinder motor, planetary transmission, wheel steer, detachable tonneau. This car was a continual surprise to our customers, to our competitors—even to ourselves. It not only showed itself the peer of any at ascending grades, but won road and track races when pitted against cars of several times its RATED power and price.

In 1904 we introduced Model B—a car having identically the same power plant as Model A, but a little heavier—pressed steel frame, storage room in front, and a bit larger tonneau. Both these models found instant favor with the discriminating class of auto users.

FOR 1905

we offer you in addition to our lighter cars a FULL POWERED, FOUR CYLINDER TOURING CAR. Thirty horse power—three speed, planetary gear transmission, handled by one lever—shaft drive, side entrance body of either aluminum or wood. And WE make it—isn't that sufficient guarantee of its excellence?

Cadillac Automobile Company, - - Detroit, Mich.

Member Association of Licensed Automobile Manufacturers.

GOODRICH Tires

Ordinary **men** pass muster until confronted with emergencies, and ordinary **tires** look good enough when brand new, but should be tagged: "Tender and not very true."

Goodrich Tires are Extraordinary Tires

Fit all roads. Require little care or attention, and cost less (mileage considered) than any other Tire.

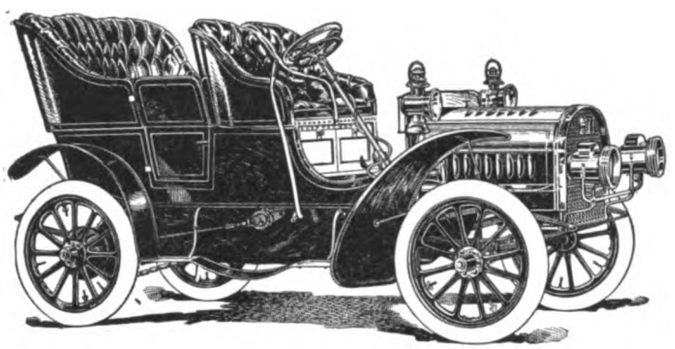
Send for booklet "The Goodrich Road" and also for "Certificates of Merit."

THE B. F. GOODRICH COMPANY, - - - Akron, O.

NEW YORK, 66-68 Reade St. and 1625 Broadway.
SAN FRANCISCO, 592 Mission St. PHILADELPHIA, 909 Arch St.
CHICAGO, 141 Lake St. CLEVELAND, 420 Superior St.
DETROIT, 80 E. Congress St. BUFFALO, 9 W. Huron St.
BOSTON, 161 Columbus Ave. DENVER, 1444 Curtis St.
LONDON, E. C., 7 Snow Hill.

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Rambler



SURREY, TYPE ONE

$1,350

18 H.P. *Immediate Delivery*

This is pre-eminently a family car. Marked provisions for comfort, safety, reliability and ease of operation make it so.

The ignition of the spark is automatic. The brakes are operated by pedals, not by levers. With the steering wheel and throttle attached to it, operabel by one hand, the other is always free to manage the clutches by the single lever, and no confusion is possible.

Each working part is readily accessible and so simple that adjustments can be made without the help of a mechanic, and without crawling under the machine. Vibration is almost entirely eliminated by the long wheel base, full elliptic springs, large tires, the rigid bracing of the engine and the balancing of all reciprocating parts.

Furnished with big luxuriously upholstered seats, and finished in olive green and brass trim which, with the graceful lines of the body, make it one of the three most beautiful cars on the market.

When delivered, it is equipped with a brass side, tail and two gas head lights with separate generator, brass horn, drop-forged wrenches, oilers, pump and repair kit. In fact, ready for use with the filling of the gasoline and water tanks.

If the price was not so conspicuously featured, it would easily be considered a $2500 to $3500 car.

Other Models $750, $850, $2,000, $3,000.

BRANCHES: BOSTON, 145 Columbus Ave. PHILADELPHIA, 242 North Broad St. CHICAGO, 302-304 Wabash Ave.
NEW YORK AGENCY: 134 West Thirty-eighth St.

Main Office and Factory, Kenosha, Wisconsin.

THOMAS B. JEFFERY & COMPANY

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, March 2, 1905. No. 23

INDEPENDENTS UP

Organization is Completed and Officers Chosen —Will Not Engage in Patent Litigation but Will Indulge in Show Affairs.

It is the American Motor Car Manufacturers' Association, if you please. It was formally introduced at Detroit on Friday last, and represents a close welding of the independent trade; that is, those makers who are not members of the Association of Licensed Automobile Manufacturers.

It grew out of the quiet meeting held during the Chicago show, and explains the jealously guarded document which was circulated for signatures during that function. Its officers are:

Chairman—James Couzens, Ford Motor Company, Detroit, Mich.

Vice-Chairman—A. C. Newby, National Motor Vehicle Co., Indianapolis.

Treasurer—J. B. Bartholomew, Bartholomew Co., Peoria, Ill.

Secretary—William Mitchell Lewis, Mitchell Motor Car Co., Racine, Wis.

Auditor—Benjamin Briscoe, Maxwell-Briscoe Co., Tarrytown, N. Y.

Counsel—Job E. Hedges, 141 Broadway, New York City.

It transpires, indeed, that the organization was really completed, and that its officers were elected at Chicago, but the secret was so well kept that not an inkling of the facts escaped.

The officers named were constituted a committee to select a location for the association's offices, and at the meeting in Detroit last Friday they selected that city as headquarters.

The following are the members of the organization, eight other applications being in hand:

Maxwell-Briscoe Co., Tarrytown, N. Y.
Bartholomew Co., Peoria, Ill.
Duryea Power Co., Reading, Pa.
Reliance Motor Car Co., Detroit, Mich.
National Motor Vehicle Co., Indianapolis, Ind.
Ford Motor Co., Detroit, Mich.
Premier Motor Mfg. Co., Indianapolis, Ind.
Mitchell Motor Car Co., Racine, Wis.
Dayton Motor Car Co., Dayton, Ohio.
Moline Automobile Co., Moline, Ill.
Jackson Automobile Co., Jackson, Mich.
Nordyke & Marmon Co., Indianapolis, Ind.
Austin Automobile Co., Grand Rapids, Mich.
Union Automobile Co., Union City, Ind.
Ardsley Motor Car Co., Yonkers, N. Y.
Phelps Motor Vehicle Co., Stoneham, Mass.
Acme Motor Car Co., Reading, Pa.
Gas Engine & Power Co. and Charles L. Seabury Co., Consolidated, Morris Heights, N. Y.
Wayne Automobile Co., Detroit, Mich.

Any idea that may have existed that the primary purpose of the association is to contest the Selden patent was fully exploded by Mr. Hedges on Monday last.

"The association was not formed to fight the Selden patent, or any other patent," said Mr. Hedges when questioned by a Motor World man on that point. "I myself am not a patent lawyer, and know nothing about patent law. The Ford Motor Co. itself will attend to the Selden suit, and neither asks nor desires any assistance from any source."

The objects of the organization were reduced to writing by Mr. Hedges, and are as follows:

First—To arrange for suitable public exhibitions of their products, race meets and other means of publicity and advertisement.

Second—To increase the interest of the public in the purchase and use of motor cars, and to confer and discuss periodically the best means to effect that result.

Third—To fully and properly advertise the respective merits of the cars manufactured by themselves, and secure the most desirable rates of transportation and shipment for themselves and their patrons.

Fourth—To furnish to their respective agents, at regular and convenient intervals, full information regarding the trade in motor cars and the newest information regarding the construction and merits of the motor cars manufactured by themselves.

Fifth—To promote public interest in good roads and to arouse public opinion to oppose legislation which discriminates against the proper use of motor cars.

Seventh—To further the exchange of scientific information by the constructing engi-

(Continued on next page)

A. C. A. HATCHING A SHOW

Nest is Well Hid But Everything Indicates that the Egg Has Been Laid.

Despite previous denials, the direction of certain straws indicate with reasonable clarity that the Automobile Club of America will promote and conduct a show next year. Other straws indicate that it will have the support of the new American Motor Car Manufacturers' Association, and that licensed manufacturers will not be debarred if they also choose to exhibit.

"What do you suppose the public will say if a certain portion of the industry is invited to participate in an exhibition and refuses the invitation?" was the hypothetical question put by a man in position to know and who then laughingly but resolutely shook his head and refused to be "drawn out."

At the Automobile Club, mum is very much the word, but it is uttered in such a way as rather to lend color to the other indications. Despite most persistent efforts, no one will confirm or deny anything regarding the mooted show.

S. M. Butler, secretary of the club, upon being appealed to by a Motor World representative, would only say:

"We are not in a position to give out any information on the subject," and forthwith he diverted the conversation to the Saxe bill. "It was a hard fight," he observed, "but we think we have succeeded in killing it. It will not be reported for a week or more, and probably not at all."

"Is it to be inferred from your statement that there is no information to be given out concerning the show situation that there has been a meeting of the committee, and that they have taken definite action, but that the time is not ripe for announcing it?" was asked, but only to elicit the same response.

"Well, how about the other members of the committee? Will they say anything for publication?"

"You might just as well save time and trouble by not calling on Colonel Smith, for he will say nothing, and Mr. Shattuck has not returned from Albany," was Butler's response.

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INDEPENDENTS UP.

(Continued from preceding page)

neers employed by the parties hereto to the end to improve the manufacture and standardization of motor cars.

"These objects make plain," said Mr. Hedges when questioned further, "that it is the purpose of the American Motor Car Manufacturers' Association to promote a show, and you may quote me as saying," he added, "that the show will be held in New York, and that it will be promoted by men whose standing in the social, financial and automobile worlds will be recognized the moment their names are made public. You may also say that every one will be invited to exhibit at this show. The officers of the association are constituted a committee of arrangements, and have ample power to proceed in the matter."

That the association is meant to stiffen the backbone of the independent agents is patent on its face, and that it will serve its purpose cannot well be doubted. That its cards will be diplomatically played the selection of Mr. Hedges as its counsel and spokesman is evidence, and that publicity will play a conspicuous part in disseminating the independents' propaganda readily will be assumed by all who are acquainted with Mr. Hedges. He is one of the most urbane and approachable of gentlemen, and a speaker of rare ability, being much in demand as a postprandial orator. He is also high up in the world of politics, having served a term as private secretary to the late Mayor Strong and filled other important political offices. During his service he made himself quite popular in newspaper circles by his clever treatment of all who approached him. He is also a member of the Automobile Club of America.

New Men on Corbin Board.

The Corbin Motor Vehicle Co., New Britain, Conn., has selected the following officers for 1905; President, Philip Corbin; vice-president and treasurer, M. S. Hart; secretary and assistant treasurer, Paul P. Wilcox; directors, Philip Corbin, M. S. Hart, Charles Glover, Paul P. Wilcox, Andrew J. Sloper, Robert C. Mitchell and Jacob S. Bretz.

M. S. Hart and Jacob S. Bretz are new members of the board, taking the places of C. M. Jarvis and H. S. Hart. Mr. Hart was formerly in charge of the rolling mill at the Stanley works.

Jury Gives Verdict for Premier.

A verdict for the defendants was returned by a jury in the Superior Court at Indianapolis, Ind., last week, when the suit of James J. Foster against the Premier Motor Mfg. Co. was heard. Foster's team was frightened by an automobile belonging to the defendant company on April 9, 1903. He estimated the injuries resulting at $15,000.

Goodrich in New Quarters.

The B. F. Goodrich Co.'s Boston branch is this week taking possession of its new quarters at No. 161 Columbus avenue. It is a roomy, glass front establishment that has been completely remodelled for the use of the Goodrich people.

DEALERS "DO THINGS."

New York Tradesmen Adopt Novel Policy to Assure Maintenance of Schedule Rates.

At a meeting of the New York Automobile Trade Association, held in this city on Thursday last, an agreement, the provisions of which are outlined below, was drawn up and ratified. It provides for the appointment of a committee, to consist of a chairman and secretary-treasurer, and further comprises a general counsel in the shape of a member of the New York bar and an auditor, who is to be a certified public accountant. The duties of the committee will be to take in hand the matter of formulating a business policy for the members of the association and enforcing the schedule of rates promulgated in detail at a prior meeting. Instead of the cash bond, which was previously thought to be the only method by which obedience to the schedule could be obtained, a system of cash deposits is provided for by the agreement in question. The latter is now in the hands of a special committee, composed of Elliot Mason, William P. Kennedy and C. Andrade, for execution, and is to become effective upon receiving the signatures of three-fourths of the members. As soon as the required number have certified their intention to uphold the agreement, the president of the association will appoint a committee, holding office for one year, to carry out its provisions. In substance it is as follows:

Each member shall pay $10 per annum for each car on storage in his garage, with a minimum fee of $100 and a maximum of $500, to be paid at the beginning of each year, but if at the end of that period it is found that the average number of cars stored during that time exceeds the number paid for over the minimum, such excess shall then be paid for at the same rate.

Any member of the committee or of the association shall have the privilege of complaining of a violation of the agreement on the part of any other member to the general counsel, and in so doing is to present such evidence in support of his complaint as is obtainable. It will be the duty of the auditor to investigate such complaints, giving the member in question all reasonable opportunity to defend and report his finding to the committee. Should the latter body decide by a two-thirds vote that there has been a violation, the offending member is to be fined $100 in the first instance, $250 in the second and $500 for the third and every succeeding breach of the agreement. Money paid into the treasury from this source will be divided among all the upholders of the agreement ratably, according to the amount of their respective deposits.

Another important provision of the agreement is aimed at the rebate evil, and, if properly enforced, should certainly be instrumental in subduing the grafting chauffeur, so far as the association members are concerned. It is as follows: "Members or their agents, employes, etc., are absolutely prohibited from giving, loaning, paying, offering or promising any compensation, gift, rebate, money or anything of value to any chauffeur or any person storing a car, on any pretext, except commissions paid for the direct sale of cars." The agreement is limited to garage owners within the confines of greater New York, and is to continue in force for three years from date. It is to take effect as soon as signed by three-fourths of the members of the association, and by a vote of the same number it may either be modified or annulled.

Approval was also given at the meeting in question to a memorial to be forwarded to the President of the Senate and chairman of the Committee on General Laws at Albany, requesting the passage of a bill for the protection of garage keepers, owing to the decision of Justice Clark, handed down in the Supreme Court last week, that the latter loses his lien on a car for an unpaid storage or repair bill by permitting the owner to take it away from the garage for no matter how short a time.

Boston's Licensed Dealers Organize.

There is "something doing" in licensed circles in Boston. Just what, it is carefully guarded, but there are some grounds for believing that it has chiefly to do with the Boston shows of the future. Although it has been kept very quiet, it is known that the Boston Licensed Automobile Dealers have been organized, and that they have or will apply for a charter under Massachusetts laws.

Those who figure as its organizers or incorporators are among the best known of the Boston tradesmen, viz.: George H. Lowe, White Sewing Machine Co.; W. W. Burke, Columbia Motor Vehicle Co.; A. R. Darling, George N. Pierce Co.; J. H. McAulmann, The Locomobile Co. of America; W. J. Foss, Pope Motor Car Co.; A. R. Underhill, Knox representative; J. Breed, Haynes-Apperson Co.; A. R. Bangs, Franklin agent.

American Wins $10,000 Suit.

In the suit of the American Ball Bearing Co., Cleveland, Ohio., vs. the United States Ball Bearing Co., a verdict for $10,000 was last week rendered in favor of the plaintiff. The case was in the United States District Court at Cleveland, Judge Robert W. Taylor presiding.

Linscott Gets Big Territory.

The newly incorporated Linscott Motor Co., which has secured a splendid location, at No. 163 Columbus avenue, Boston, Mass., will handle considerable territory in the interests of the National and Reo cars. Eastern Massachusetts, Maine, New Hampshire and Vermont are included in its domain.

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FOG BEGINS TO LIFT

Disclosure of St. Louis Car Co.'s Plans Lets Light Into Steinmeyer's Mystery.

St. Louis, Mo., Feb. 25.—One thing is certain, the Steinmeyer "million-dollar automobile factory," which may be built at Kirkwood, a residence suburb of this city, has no connection with the St. Louis Car Co.

As the Motor World stated at the time the deal was consummated, the St. Louis Car Co., one of the biggest builders of railway coaches in the country, will manufacture practically a replica of one of France's famous cars, the Mors, have effected the necessary arrangements with M. Mors, when he was here in December last. The news of the Steinmeyer project came out soon after, and although that "gentleman contractor" has vociferously refused information and made a mystery of the affair, there have been quite a few persons in the trade who fancied that the Motor World was barking up the wrong tree. They were of opinion that Steinmeyer's factory was to be occupied by the St. Louis Car Co.

Yesterday, however, the Motor World man saw H. F. Vogel, vice-president and general manager of the car company, and settled all doubts on that score. When the question was put to him, he laughed a sort of reminiscent laugh. He admitted that he had been approached by Steinmeyer.

"But it is immaterial to us," said Mr. Vogel, "whether one or ten other concerns start manufacturing next door or on the next block to us. We have plants and facilities of our own, and would not buy out any of them. We purpose making automobiles, not bubbles."

This sheds at least a side light on Steinmeyer's Kirkwood mystery.

Mr. Vogel said further that the St. Louis Car Co. is spending upward of half a million dollars in making ready for the manufacture of motor cars. Two two-story buildings, one 50 by 400 feet, the other 60 by 200 feet, and both located at 5200 North Second street, are being remodelled and equipped for the purpose. It is here that the mechanical work on the "St. Louis Mors," as the car will be styled, will be done, while the bodies and other woodwork will be turned out at the plant of the Laclede Car Co., 4500 North Second street, which is a part of the St. Louis Car Co. It is expected that active operations will commence in about six weeks with 400 men, which number will be increased to 600 by July 1, and before the end of the year to as many more.

Work will be at first concentrated on the "St. Louis Mors," but a runabout is included in the company's plans for the near future. Later it is proposed to build motor vehicles of all types, and with the wealth, facilities and reputation of the concern, it will command immediate and general attention seems to go without saying.

The Week's Incorporations.

Roswell, N. M.—Roswell Automobile Co., under New Mexico laws, with $10,000 capital.

Detroit, Mich.—Detroit Automobile Co. has increased its capital stock from $2,000 to $25,000.

Bay City, Mich.—Smalley Motor Co. has increased its capital stock from $60,000 to $80,000.

Chicago, Ill.—Adrian Automobile Co., under Illinois laws, with $5,000 capital. Corporators—Thomas Singleton, W. T. Lambert and W. Black.

Augusta, Me.—Excelsior Steam Car Co., under Maine laws, with $500,000 capital, to deal in automobiles. Corporators—L. C. Cornish and N. L. Bassett.

Chicago, Ill.—Branstetter Automobile Co., under Illinois laws, with $1,000 capital. Corporators—John J. Symes, Thaddeus O. Bunch and Jonathan G. Latimer.

New York City, N. Y.—Auto Mail & Delivery Co., under New York laws, with $150,000 capital. Directors—Charles J. Warner, John Finck and Frank H. White.

Newark, N. J.—Reo Automobile Co., under New Jersey laws, with $50,000 capital, $3,000 paid up. Corporators—Frederick E. Hodge, Thomas P. Gould and Isaac D. Clark.

New York City, N. Y.—Leavitt Motor Car Exchange, under New York laws, with $1,000 capital; to deal in automobiles. Corporators—R. J. Leavitt, M. P. Leavitt and M. R. Leavitt.

Newark, N. J.—Simplex Co., under New Jersey laws, with $10,000 capital; to deal in all kinds of electrical apparatus. Corporators—Maurice C. Rypinski, John M. Lansden and Charles Nilsson.

Trenton, N. J.—Porcelain Electrical Mfg. Co., under New Jersey laws, with $25,000 capital; to manufacture all kinds of electrical appliances. Corporators—Charles A. Secor, William L. Peacock and Frederick R. Brace, Jr.

Detroit, Mich.—Stirling Automobile Co., under Michigan laws, with $25,000 capital; $6,440 paid in in cash, $6,000 in personal property. Corporators—John R. Stirling, Alexander M. Alexander and Robert B. Alexander.

More Room for Diamonds in New York

Because of the rapid increase in their business, the New York branch of the Diamond Rubber Company has been obliged to seek larger quarters. The seeking has led to the lease of the premises 78 Reade street, where a plentitude of the necessary elbow room will be asured. The removal from their present headquarters, at 7 Warren street, will not occur, however, until May 1.

To Enter Jobbing Trade.

The Boston Cycle & Sundry Co., Boston, Mass., has added an automobile supply department to its business, and will job accessories throughout New England. Peter Semmering is the manager of the department.

STORY OF SCRAP HEAP

Showing How Metal Thrown Away Sold Several Cars for One Concern.

"Talk about 'casting bread upon the waters,'" said John A. Kingman, of the Locomobile Co. of America, one day last week—and he was not talking for publication either—"but we made one mighty good customer last year by casting metal into the scrap heap. The gentleman was being shown through the factory, and it just so happened that he came upon Engineer Riker while the latter was putting a lot of metal to the test. It proved not up to our standard, and Riker, boiling mad, was ordering it thrown into the scrap pile.

"Our visitor said nothing of the incident at the time, and nothing more was thought of it, not even when we booked the gentleman's order. But that it made a deep impression we discovered during the year, when on three separate occasions this particular purchaser sent to us an intending buyer, each of whom remarked that his friend had emphasized the scrap heap incident in recommending the Locomobile. We got their orders in every case, too," added Kingman.

"Indeed, we do test every piece of metal that goes into our cars," he said in answer to a question. "It has been a hard task to impress on those of whom we buy our material that it simply must be of certain compositions and standards, but I believe the results justify the trouble and expense, and those who sell to us have come to realize that we mean what we say and do not deviate from our policy in this respect. I have seen Mr. Riker reject an entire lot of axle forgings, for instance. They stood the bending test when hot, but when tested cold they developed a crack and promptly were rejected. The crack was so minute that the average man never would have detected, but Riker simply would not accept them, and they were thrown back on their maker's hands. It required a lot of correspondence and travelling to and fro to settle the matter, but—well, we are now getting the material we want and must have, and the makers appreciate that we will take no other."

Pennsylvania Gets More Time.

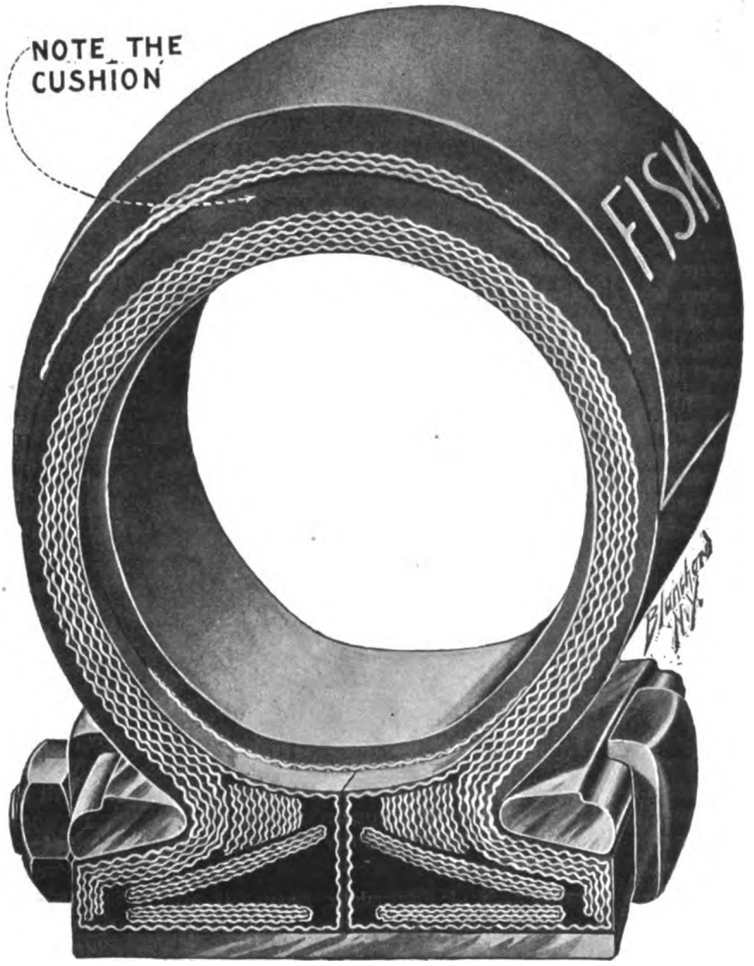
The answer of the Pennsylvania Rubber Company to the suit filed by the G & J Tire Company for infringement of the latter's clincher patents, which was due to be filed on Monday next, will not be then filed. By consent of the plaintiffs, an extension of time has been granted.

The suit, which was filed in the United States Circuit Court for the Southern District of New York on December 23 last, of course, involves the several patents under which the G & J detachable tire is manufactured, which are as follows: 454,115, June 16, 1891; 466,565, January 5, 1892; 466,789, January 12, 1892; 493,160, March 7, 1893; 523,314, July 71, 1894, and 588,956, April 28, 1896.

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SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
DETROIT, 254 Jefferson Ave.
MONTREAL, CANADA

ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
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DENVER, 1534 Glenarm St.
SAN FRANCISCO, 114 Second St.
LOS ANGELES, 1034 So. Main St.

LONDON, ENGLAND

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THE MOTOR WORLD

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NEW YORK, MARCH 2, 1905.

Quality in Raw Materials.

Something approaching a standard type of car in each class having been put forth by the majority of makers in this country for the present season's business, attention can be devoted to investigation and experiment, more with a view to improvement in the quality and fitness of the materials employed than in the direction of engineering design, though this feature will naturally always be first.

The salient features of design, such as suspension, transmission, motors, clutches and the like, best adapted to the touring car and the runabout, have now been tacitly recognized by makers to such an extent that a composite of all the cars of each class exhibited at the recent shows would reveal marked departures but in isolated cases. Some of the latter are confined to more or less unimportant detail, while others, as outlined in the Motor World's show number, are somewhat bold conceptions, the trying out of which will be followed closely during the coming season. Apart from this, quality must henceforth be the prime requisite of improvement.

Few things have been more productive of advances along this line than the various endurance runs held during the past year. Of these, probably the one to Pittsburg proved the most prolific in results. Failure to complete the run was not in every instance the only indication of defect, for luck was a potent factor in getting through, and even the successful cars revealed their weakness to the practiced eye during the run and afterward. As a result, better materials have been adopted by some makers in the comparatively short time intervening between the event in question and the present year's show. Quality in this connection can, of course, mean nothing more or less than metal—steel and iron. Both are coming in for no small amount of attention where intrinsic betterment is concerned; better steel for gears, transmission and driving for shafts and frames, better iron for cylinders.

The Classes of Purchasers.

Automobiling has progressed, is still progressing by levels and, as in mining, the course of progress is downward. First the richest subsoil deposits, then well paying lodes, decreasing in richness as greater depths are reached, until finally strata are found where nothing but the economical methods of production brought about by organization and the use of the best modern machinery will show a profit.

The millionaire buyer of automobiles who sports a "stud" of anywhere from six to a dozen cars, and keeps it up to date by purchasing several new models each year, represents the first level in the comparison, except that he is not apt to play out so soon, as this, his latest, is no passing fancy of the hour to be cast aside and forgotten in a short time. But, on the other hand, it takes more than one swallow to produce a man-sized feeling of hilarious prosperity in a poor man's mind, and a handful of "mu...s' is certainly not sufficient to generate this and keep it alive, where an industry is concerned.

The next levels represent everything from an extremely comfortable state of solvency down to the poor cuttings that have to be worked economically in order to show a dividend—probably the man who manages to buy a car on his friends' money and becomes hopelessly involved in debt trying to keep it out of the repair man's hands corresponds to the latter simile as well as anything.

But neither of these extremes will support a large and constantly growing industry—it pays to cater to both, because what the latter lacks in funds it makes up in numbers; the crop is unfailing. The man who can afford to buy a car and can afford to run it if it is not going to run him straight into bankruptcy in the course of the first season is the one that the manufacturer has to depend upon when all is said and done. His name is legion, but having in the majority of instances had to earn the money he is about to spend, he is likewise a canny individual. Not racing records, but endurance records, appeal to him, for what he wants to know most is not the first cost of the car—advertisements tell him that—but the cost of maintenance and repairs, particularly the latter, and nothing short of experience forms a foundation upon which to base such knowledge.

"Repair records" is an apt term to express the qualification the manufacturer has to prove in order to satisfy this type of buyer, and it is safe to say that more makers are giving attention to this phase of the business at present than are building high powered racing cars to cut fifths of a second off the mile record. How to build a car that will, if necessary, stand the hardest kind of work for the longest time with a minimum of repair, and that will endure ordinary service indefinitely without being laid up except for minor derangements, is the question. Merely because "repair records" are not made on tracks in the presence of enthusiastic thousands is no reason to doubt the striving for them that is constantly going on. Every manufacturer, every agent, and every repairer is keenly alive to their value, and it would not be difficult to mention cars the popularity of which is undoubtedly due to their achievements in this direction.

Improving the Small Car.

Across the water they are still discussing "the car for the man of moderate means." One of the parties to it goes unusually deep into the matter, and treating with the cheap machine, he outlines the salient features of what he terms the ideal low priced car. In this, though he goes about the proof of his assertions in a loose fashion, he brings out several noteworthy points which are fully as applicable here as they are abroad. After limiting the cost of such a car to a maximum $1,000, he goes on to say, in part:

"The great mistake made by designers in the past has been that of slavishly copying the big car and endeavoring to bring out a

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miniature edition at a lower price, so that in many cases it is to be feared that the retention of features usually found in big cars has been made possible only by a falling away in quality of workmanship or material, or both."

He concludes, quite rightly, that this is not ruleable in any sort of machine and points out the necessity of absolute interchangeability of parts in such a car, since the average owner, being a man of limited means, is often obliged to be his own mechanic, though he be not a skilled workman; hence the need of fitting in the replacement of parts becomes a burden and an added source of expense.

Descending to particulars, this contributor advocates the use of the single cylinder horizontal slow speed motor of about 8 horsepower. His objection to the single cylinder vertical type is that its large size, or else the excessive speed required to secure sufficient power, render it inapplicable, while the double cylinder construction practically doubles the cost, so he contends. As to transmissions, the Panhard type of sliding gear is too costly, he thinks, while the planetary form lacks the requisite durability. He suggests instead of either the use of a very simple form of sliding gear, giving three speeds, with direct connection on the highest. As to the body, he says that "this is the last place in which to attempt to copy the big car, and especially if of the tonneau type, as the length of wheel base cannot possibly afford sufficient roominess at the back, otherwise than by building beyond the rear wheels—an unsightly and unmechanical way out of the difficulty.' Among the few luxuries of the expensive car which should, he thinks, be copied in the smaller machine, are double ignition, force feed lubrication and automatic carburetion.

A very common criticism of the low priced car in this country is its apparent effort to imitate the larger machines. In many cases this is true not only of the external parts, but of the mechanism as well, and it is quite true that the reduction in price carries with it often a lowering in the grade of workmanship and material. The latter is a natural result of the reducing process—if you choose to consider the small car as a derivative of the larger—because though a reduction in the size of the parts which contribute to weight and power, or which, roughly speaking, determine its size, must induce an approximately proportionate reduction in the cost of manufacture. Still, the net profit being comparatively small, the maker must either assure himself of a great number of sales or else still further reduce the cost in order to secure his due returns. And a certain reduction in quality is perfectly legitimate, so long as it is applied only to such non-essentials as the external finish of parts and the substitution of lower grade materials in places where they cannot jeopardize the safe working of the car. But many cars are marketed in which unfortunately this tendency has been allowed to have a preponderating influence on the design itself, and in which certain of the most essential elements have been grossly cheapened. Such cars, even though they be few in number, go far to condemn the whole class. So long as the reduction in cost is carried on reasonably, it is perfectly proper, but once it is permitted to encroach on the essential, it is grossly inexcusable, and can never contribute one iota of repute to the industry nor fail to react harmfully on those who sanction it.

The harmless imitation of purely external characteristics of the expensive machines is entirely apart from this main consideration. For there are those in plenty who crave the false bonnet and baby tonneau simply because they "look real," who, so long as they cannot afford diamonds, are perfectly content with paste.

For Commercial Usage.

The wise heads have prophesied all along that some day the automobile industry would cease to derive the bulk of its returns from purely pleasure vehicles, and would, instead, depend chiefly on commercial types. The adaptation of auto propulsion to the haulage of all sorts of goods, and the use of cabs and 'bus lines for the transportation of human freight, will, once the proper degree of mechanical perfection is attained, bring about a veritable 'horseless age"—so they say. However that may be, there is as yet no apparent diminution in the use of the horse, nor any indication of his place being immediately usurped.

The attention of the public and that of the average maker as well is almost wholly focused just now on the pleasure vehicle in its wonderful popularity. The great preponderance of this side of the business, coupled with certain rather dubious results of experiments hitherto made, lead to an impression that the more practical phase of the business is being neglected. But all the time a steady advance movement is going on, not so marked as in the other line, but none the less hopeful because of its conservative rate of growth, and one which, for this very reason, augurs a stronger future than is assured its fellow, whose rise has been more meteoric.

Certain firms in various parts of the world have adopted commercial motor car service, and, after a more or less impartial test, have discarded it. Others, better satisfied, are continuing it, fully convinced of its utility. Of these some are working on a paying basis, others at a loss; of the latter, some are being continued in the hope of ultimate betterment, and others simply as an advertisement. In cases where failure has occurred the cause is almost always attributable to mechanical imperfections in the equipment. The high cost of upkeep, the chief factor of expense, has been due largely to design which must be considered as being in a measure experimental. But this drawback and that of uncertainty of action, which is allied to it, must decrease with time. The development in the other line, rapid and forced as it has been, is highly beneficial to its more staid relative, in that it has evolved in a short time the laws of structural formation which would not otherwise be brought out in years of slower growth, of milder rivalry and the struggle against the prejudice of the very conservative.

That there is a steady growth in this line cannot be gainsaid. The most casual observance of the traffic of the larger cities proves it; trade returns prove it. There are a considerable number of practical vehicles in use to-day in all parts of the world—vehicles which are practical in the sense of yielding a practical return for a cash outlay—and their number is constantly increasing. Reports are continually coming in from here and there of the inauguration of new lines and new systems. Frequently, too, there come reports of their discontinuance. But this is of no significance in a broad sense, since the imperfections of a newly made machine, and the factor of uncertainty in operation due to the fallibility of human nature—the purely personal equation—involve just such results in any new line of business. For the introduction of a new process, or system, or method involves a twofold educational process—the designer must learn to create, and the user to operate to advantage.

"We have read with a good deal of interest the Motor World's comments on the Chicago show, and so far as we have seen they comprise the only real statement of the facts. The others evidently were fearful of saying what they think or to give the facts."—Extract from a letter from a Western exhibitor.

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FOR AN AMATEUR RULE

A.A.A. Takes First Step Toward One—Changes Made in Vanderbilt Cup Conditions.

At a special meeting of the racing board of the American Automobile Association in New York on Tuesday last, there was taken the first step in the direction which the Motor World has advocated since the formation of the organization, i. e., the drawing of a line between the amateur and the professional.

It took the form of the appointment of a special committee, composed of T. N. Hilliard and H. L. Bowden, of the racing board, and E. T. Birdsall, of the technical committee, who will revise the racing rules, and not only present an amateur definition, but recommend such other changes as experience has shown to be necessary. This committee will report directly to the racing board, and the racing board, in turn, to the board of directors, at a meeting on March 9, before any recommendations that may be made will be embodied in the rules.

It is understood that the racing board inclines strongly to an entire separation of amateurs and professionals, and that no halfway definition is likely to be recommended. The great stumbling block in formulating a definition is the manufacturers who themselves engage in racing. It is said that, while it is realized that some benefit may thereby accrue to the respective businesses of these gentlemen, sportsmanship is the underlying principle of their competition, and that, accordingly, they will be included in the amateur class. There is said to be no disposition to establish an intermediate class

Important action was also taken in respect to the Vanderbilt cup race. By permission of Mr. Vanderbilt, the date for the closing of entries was extended to May 15, and two changes of moment in the conditions also were made. First, that henceforth the number of cars representing any one country in the race will be five instead of six, as heretofore, and, second, that the entry fee will be $500, with no rebate to either starters or non-starters. Last year the entrance fee was $300, one-half of which was returned to the entrants who actually started. The deed of gift has also been so altered that, by consent of the A. A. A., the winning club may take the cup abroad without depositing a cash bond.

The race will be held between August 15 and October 15 next, and the course will probably be the same as last year—Long Island—unless a more suitable one is presented. It is said the supervisors of Nassau county are favorable to again having the contest held there.

As tacitly agreed at the close of the recent speed tournament on the Daytona beach, the Florida East Coast Automobile Association was granted the reservation of a single week between January 22 and February 19, 1906, for the promotion of automobile races. Technically no sanction can be given until a programme of races is submitted, but a reservation is equivalent to a sanction. The F. E. C. A. A. will be asked to select its week as soon as possible.

An application for reservation had also been asked by the Ormond Racing Association from January 22 to 27. Pending the definite selection by the F. E. C. A. A. the Ormond application will not be acted upon. Though the members of the board who attended the last Florida meet had practically agreed not to recognize the Ormond claims, it is possible that reservation of a single week may be given the Ormond association, following that of the Daytona organization. May 30 was also reserved as a date for a race to be held at Empire City Track, Yonkers, N. Y.

The application of Walter Christie for a sanction for private time trials in Florida was denied. Mr. Christie was informed that he would not be disqualified for making such trials, but that no records claimed would be recognized. This establishes an important precedent.

The meeting was held in the rooms of the Automobile Club of America. Those present were George Isham Scott, T. F. Hilliard, E. T. Birdsall, A. L. Riker and C. H. Gillette, the secretary of the A. A. A.

Bowden Likely to Become Racing Head.

W. C. Temple, of Pittsburg, who resigned the chairmanship of the A. A. A. racing board immediately after the Florida Speed Carnival, has declined to reconsider his action, which will make necessary the selection of a new head. William Wallace, of Boston, who was prominently mentioned for the position, and who is still a member of the board, will not become chairman, because, as he will be a competitor in the Vanderbilt Cup race, he does not deem it proper that he should be chairman of the committee in charge of the event.

The most likely man for the office is understood to be H. L. Bowden, of Waltham, Mass. The office is to be formally tendered to that gentleman to-day, but there is no certainty that he will accept it. A secretary of the racing board will also be named. He will most certainly be either a New York or Boston newspaper man.

France to Throttle Bennett Race.

Cable advices from Paris state that the Automobile Club of France has abandoned the Grand Prix, and this year, at least, that "consolation race" for the French trade which came so near to "queering" the Bennett cup race, will not be run. That the Frenchmen's commercial instincts wholly possess them, however, is indicated by the further fact, conveyed by the cables, that the club has decided practically to throttle the Bennett races, the throttling being encompassed in an agreement that, beginning with 1906, French automobile manufacturers will be invited annually to participate in but one big race, and that the Grand Prix, which will be made an open event.

A. C. A. SELECTS A SITE

Big Club to Build on Fifty-fourth Street—Plans of the Structure.

Announcement is made that the Automobile Club of America has finally chosen a site for its new home, and that building operations will be begun at once. The choice is the result of a careful study of the present needs of the club, and has been made with due reference to the trend of the city's growth.

A canvass of the location of the resident members, made some time ago, showed the present location to be quite central, and accordingly an effort was made to secure land in the immediate neighborhood of Columbus Circle, but the prices asked for the most desirable lots were wellnigh prohibitive, and it was only after a deal of skilful negotiation on the part of Bryan L. Kennelly, through whom the purchase was made, that favorable terms were secured. The lot chosen is in Fifty-fourth street, just west of Broadway, and is particularly advantageous not only on account of its proximity to the park and the residential district uptown, but because it is in the very heart of the new retail automobile section.

The work of designing the structure is already under way in the offices of the architect, Ernest Flagg, who is preparing to submit the preliminary drawings to the building committee at a special meeting called for next Saturday.

Although it is early yet to predict definitely the style or arrangement of the house, it is understood that the specifications call for a thoroughly modern building six stories in height, fireproof and substantial. As it must serve the twofold purpose of clubhouse and garage, it will be in some respects unique. The upper and lower floors will be used for the storage of cars, while the basement will be fitted up as a complete repair shop, where will be facilities for doing all sorts of work. A special feature, promised some time ago, will be a dynamometer, for testing the power delivered at the wheels of cars. The facilities for handling and recharging the cars will be entirely new in design; every device which experience can dictate or ingenuity devise will be supplied for the convenience of the car owner. The floor space, which will be nearly thirteen thousand feet, will give ample room for storage of upward of two hundred cars on the two floors, and no effort will be spared to make the equipment complete in every detail.

The clubrooms will be arranged in befitting style, and will include, beside the executive offices and a large assembly hall, a library, parlors, reading and lounging rooms—for the accommodation of the "rockingchair fleet"—and a restaurant, to say nothing of lockers and baths galore.

It is understood that work on the ground will be begun as soon as the houses now standing can be cleared of their tenants, and it is hoped to have the work completed within a year.

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RIDDLED SAXE BILL

Motorists Bring Strong Arguments to Bear While Only Chronic Reformers Speak for It.

The flower of New York State automobiledom, representing millions of capital and an industry employing thousands of men arrayed against a few malcontents from a spot on the map comprising possibly less than a square mile on Manhattan Island, and known as the West End, was the sight presented at Albany on Tuesday last, when the obnoxious Saxe amendment to the present automobile law came up for discussion.

The hearing was held in the Senate chamber, William H .Hotchkiss, president of the New York State Automobile Association, acting as master of ceremonies. Winthrop E. Scarrit, former president of the A. C. A., led the opposition. His speech, which covered the entire ground, was in part as follows:

"The fate of the pioneer is always a hard one. Morse walked the streets of New York despairing and penniless; Whitney, with his cotton gin, and McCormick, with his reaper, were denounced by the laboring men. The first locomotives which ran through the Mohawk Valley were denounced. What a terrible outcry was made against the trolley car and the bicycle. And now the last target of abuse from an indignant, if not altogether thoughtless, public is the automobile.

"Let us analyze the situation and see whether these drastic and repressive measures which are now proposed are sensible, necessary or reasonable.

"The automobile, according to a ruling by Judge Cooley, has rights upon the highway of which no Legislature has the right to deprive it.

"We object to the Saxe amendment because it is so tyrannical, unfair and unjust, in that it puts it within the power of any petty, prejudiced magistrate to send an automobilist to jail for violation of the speed law, no difference how slight or unintentional that violation may have been.

"The present law is a compromise and works out in practice fairly satisfactory to everybody. The Automobile Club of America has used its influence among its members to have them obey this law, and to use their cars on the highway with care and consideration for the rights of others. The same club has offered a reward for a gross violation of the present law. We are as anxious as you, or any other gentlemen, to stamp out reckless and dangerous driving on the highway. We object, however, to having the public put us altogether in one class and condemn the many for the sins of the few.

"We submit that nine months is not sufficient time in which to test the merits or demerits of any new law. Thus far the present law has worked satisfactorily.

"We do not believe the legislators of the Empire State, pricked and prodded by a few motor-phobiacs, will permit themselves to enact legislation, which, five years from now, they will be heartily ashamed of."

James Carr, president of the West End Association; A. L. Blauvelt and J. L. Brower, "chronic agitators," as they were dubbed by the opposition, spoke or rather denounced the automobile and its owner, and the first named quoted a record of five and a half seconds per block taken by himself on Broadway. One J. C. Coleman said he represented 350,000 to 400,000 people, in addition to the West Enders. but wasn't particular about mentioning who they were.

A. R. Shattuck, also a former president of the A. C. A., also spoke, and said in part:

"I have driven thirty thousand miles and have never been arrested. The danger from traffic in our city is very great, but is it due wholly to the automobile? In 1904 seven persons were killed by automobiles. It is too many, but in some instances it was due to the fault of the victims. In the same time, sixty-two persons were killed by horse drawn vehicles, fifty-seven by the cars of the Interurban company, twelve by the cars of the Interborough company and twenty by steam cars running in the city."

Speaking for the New York Motor Club, Charles Hyde said the chief fault was in the non-enforcement of the present law.

In closing the argument in opposition to the measure, Mr. Hotchkiss, of Buffalo, said that the law in relation to horse vehicles was not enforced.

"Which is better for the Legislature and the people you represent," Mr. Hotchkiss asked. "To have the support of the motorists in the enforcement of the law or their opposition to such enforcement? It will be our duty to attack such a law as is proposed."

Charles T. Terry, of counsel for the N. A. A. M. legislative committee, and who submitted a brief with which many of Mr. Scarrit's arguments coincide, when seen by a Motor World man the following day, said the sum and substance of the West Ender's argument is, "there must be something wrong with the law because automobilists violate it."

"That's genuine, for those are the very words," he added, "and this profound reasoning was supported by letters of a few ministers in New York City and a school principal, who said he wrote in behalf of two thousand children. With this strong foundation of logic, the plea of the West Enders, in effect, was "because the law has not been enforced, pile up the penalties." Among others who spoke in favor of the bill, Senator Armstrong—a gentleman with a well filled stable, by the way—argued along this very line, and in consequence played directly into the hands of the opposition in everything he said, which was nothing more or less than a plea for the enforcement of the law. "Why don't your automobile associations enforce the law, instead of coming here to oppose legislation?" he asked, to which answer was made that if the State found itself too poor to enforce its own legislation, that the asociations might consider the project of getting up a subscription for the purpose, but otherwise did not think themselves particularly concerned in the enforcement of laws.

"That Popular prejudice, nothing more or less, is at the root of the whole matter, may be seen at a glance, from a perusal of every automobile bill that has ever been presented to the Legislature, as well as the manner in which it has been brought before that body," said Mr. Terry, in conclusion. 'Bill Jenks, up in Squedunk, is scared half to death through an automobile frightening his team, and in the heat of his wrath makes his sentiments known to his representative at Albany. The latter has to make good to keep in with his constituents. Just alter that a bit to suit city conditions and you have it all."

Senator Armstrong, chairman of the committee which has the Saxe and Grady bills under consideration, said that an executive session would be held the day following, and that the bill would not be reported until next week. In the opinion of some of its opposers, it may not be reported at all; it may be allowed to die a natural death in the committee, as is so often the case when the proper wires are pulled. If it is, it will be nothing more or less than the result of this unreasoning prejudice on the part of those opposed to the atuomobile.

To Enlighten Illinois Legislators.

Country legislators at Springfield, Ill., will have the time of their lives this week when the legislative committee of the Chicago Automobile Club takes them out in a big touring car equipped with a speedometer to demonstrate a few points about the speed of an automobile.

The demonstration is designed to find support for the bill which will be presented by the club committee, and which provides for the State control of automobiles and specifies that the State shall issue licenses in the form of a tag two inches in diameter, with the number stamped on it.

The measure specifies that a speed limit of ten miles an hour in congested districts, fifteen miles in sparsely settled parts and twenty miles in the open country be allowed.

The bill will be presented to the legislative Committee on Roads to supplant the measure introduced by Representative Heinl.

Club Dines City Officials.

The Mayor, members of the Board of Supervisors, police authorities and Park Commissioners graced the festive board on the occasion of the first annual banquet of the Automobile Club of California in San Francisco last Saturday night. An apparent spirit of good feeling prevailed. The club members told the public officials what automobilists needed in the matter of protection and better roads, and the city's officers promised to co-operate with the club in securing needed improvements.

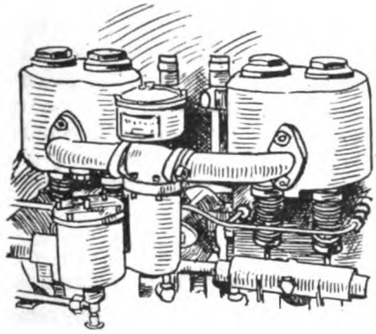
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OF ENGLISH ORIGIN

New Developments in Carburetters and Ignition that Appeared at the London Show.

If not productive of anything else of great importance in the estimation of the outsider, the recent Olympia show in London, which closed on the 20th of February last in London, brought out one fact so clearly that even the man with but half an eye can scarcely have failed to see it. And that is that American manufacturers have not been slow to realize that England is going to prove an excellent market, and almost half a dozen of them are now represented on the ground by some of the best agents in the country. These are the White, Cadillac, Winton, Oldsmobile and Orient—all were very much in evidence in well filled exhibits at the show.

Where advances are concerned, the greatest amount of novelty, as is to be expected,



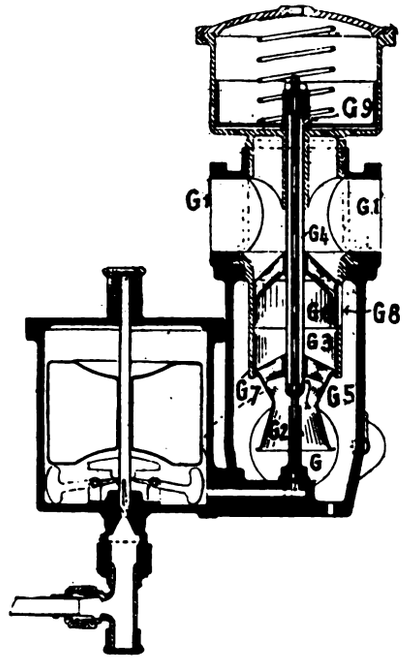
Brotherhood Carburetter Showing Location on Engine.

has to do with the motive power, and is centred for the greater part about the two all absorbing features of carburetion and ignition.

In the former the automatic type of carburetter is now prominent, improvements in the main being more with a view to better air regulation. The carburetter fitted to the Brotherhood car, shown by the accompanying illustration, was an instance of the sort. As will be noted, it is of the usual float feed arrangement. The intake faces the exhaust pipes and is in close proximity to them, quite a departure being noticeable, however, both in the location of the carburetter, this being practically on a level with the intake valves of the engine, also the fact that a lead is taken from each side of the carburetter for the different pairs of cylinders. This arrangement will be noticed in the second sketch.

In the second illustration the spray jet, G2, has a hole of comparatively large diameter drilled through it, and it projects upward from the base of the mixing chamber in much the usual way. Fitting down inside the spray jet is a long needle valve, G3, which has two flats filed on opposite sides, to form tapering faces along that portion of it which fits inside the spray jet. The needle is adjustable with relation to the containing tube, G4, by means of a nut at its upper end, this tube carrying a conical and a cylindrical sleeve, G5 and G6, in such a manner that these and the needle travel upward or downward together with it. The conical sleeve surrounds the spray jet, G2, and is contained in a stationary cylinder, G7, that acts as a guide for it. The cylindrical sleeve, G6, slides in the same cylinder, and normally covers the ports, G8, cut through the cylinder wall, but these are uncovered as soon as it begins to move upward with the tube, G4.

This tube and the auxiliary parts moving in conjunction with it are all carried on a rod rigidly affixed to the piston, G9, moving in a chamber surmounting the carburetter just above the double outlet, G1. This piston is normally held down by a spiral spring, but is actuated by the suction in the mixing chamber and is then raised to a greater or

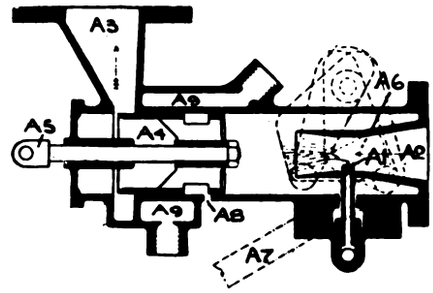


Brotherhood Carburetter.

less extent by atmospheric pressure, as it is open to the latter beneath through small perforations and connects with the mixing chamber from above through other small holes leading into the tube, G4.

The function of this piston is to provide an auxiliary supply of air by opening the ports, G8, in its travel in order to prevent the mixture becoming overrich in consequence of the throttling action of the sleeve, G5. But the latter rising simultaneously thereby increases the amount of annular space about the jet, and the effective area of the jet itself is increased at the same time, though the suction should not fluctuate. By this arrangement it is claimed that the capacity of the carburetter increases proportionately with the speed of the engine or the lift of the intake valves, though the character of the mixture is maintained uniform. In practice this carburetter is said to have given excellent results.

Another method of accomplishing the same result was in evidence in the new type of carburetter fitted to the Albion car. It has two auxiliary air valves, but, unlike the majority of these devices, both are mechanically operated. The accompanying illustration is of a sectional view of the mixing chamber, the float feed, which is of the usual type, being omitted. The main air supply is also patterned after recognized standards, a coned intake facing and close to the engine being employed. But, as will be noted, the throttle, though also of the piston type, lies horizontally, and is mechanically actuated. It is provided with a port cut in its wall for the purpose of admitting an auxiliary supply of air at full load. This port is brought opposite to a similar opening, A8, in the wall of the mixing chamber, which communicates with the atmosphere, but these ports only coincide and admit air when the engine is working with an open throttle. Originally the whole supply of auxiliary air was taken through another port, A6, which is directly controlled by the governor through the link, A7. This valve is still retained, and admits auxiliary air automatically in proportion to the speed of the engine. As first fitted, however, it was found that the range was too limited, for



Albion Carburetter.

at high speeds and light loads the mixture became too weak, and in "speeding up" it was found that the engine received insufficient air in the initial stages. To remedy this, the auxiliary air port, A6, was reduced in area by one-third—which got over the difficulty of weak mixtures at high speeds—and a port, A8, equal in area to the reduction made in the port, A6, was introduced into the throttle—which successfully overcame the other trouble of insufficient air in the initial stages of speeding up the engine.

The same car also embodies a rather unique feature in its ignition system, which is of the low tension magneto type—unique in the fact that, though advocated in several instances in this country within the last two or three years, it has aparently never been tried in practice. It consists in making the magneto an integral part of the engine itself and as predicted in the Motor World show number, it is only a matter of time when this will come in for the share of attention it deserves, for it is a long step in the direction of simplicity and efficiency.

The magnets are carried by a brass spider, which is mounted directly on the front end of the crank shaft, and thus forms the only moving member of the whole aparatus, for the armature is held stationary by a bracket fixed to the crank chamber. The magnets consists of two flat steel bars parallel to one another on either side of the crank shaft.

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The pole pieces are of cast iron, and are bolted directly to the ends of the magnets, and they are so shaped that they project backward and overlap the full width of the armature core. The latter is of laminated construction, built up of a number of thin insulated soft iron plates stamped in the form of a circular horseshoe. Directly opposite the gap in the armature core is the armature coil, and in this position it comes exactly under one of the pole pieces, when the other pole piece bridges the gap. At this instant the magnetic "lines of force" are reversing their direction through the iron core of the coil at the greatest rate, and consequently the magneto is then generating to its fullest capacity, and at or about that position the spark is "timed" to take place. The magneto itself is not "timed," but sufficient latitude is allowed to permit it to be effective at all positions within the "timing" range. Being keyed directly to the crank shaft, there is no trouble in resetting it in the event of removal, and the fact that the magnet is the only moving part renders the apparatus particularly simple.

The Ears as Trouble Detectors.

A well-trained ear as a qualification for the practical chauffeur, whether the latter be the typical "hired man in a leather suit" or the owner who depends upon his own mechanical ability to keep things going, will probably not appear particularly essential at first sight. But many of the ills that the motor is heir to will in their inception be revealed by its noises in operation, the smooth, steady rythm of exhaust and intake mechanism and the breathing of the former, blend with the transmission in the perfectly operating engine to a soft purr which means contentment to its owner so long as it continues.

Of missing explosions little need be said, for until he can recognize this the instant it occurs, the chauffeur's education has not begun, should he be unable to progress past this stage, he is beyond all hope and had better grace an ash cart. None short of a dumb man can fail to recognize the symptoms of missing fire. However, it is not such patent evidence of something wrong, but the faint variation in the steady hum, frequently only discernible by the trained ear which calls for skill in this direction. For in the majority of instances this indicates not that something has gone wrong, but that it is on the road to breakdown, and heed given to its incipient complaint when first heard will often prevent damage.

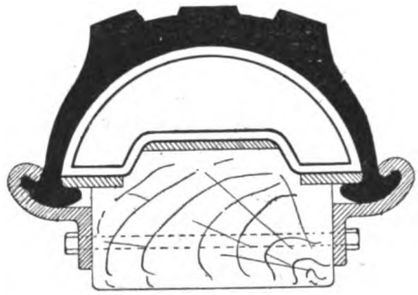
Theoretically the perfectly designed car makes no noise, and this holds good in practice, more this year than ever before—to the man on the sidewalk—but to the man at the wheel the clicking of the cams and the drone of the gears unite to form a steady hum, only varying with the speed, and any interruption of which is a certain indication of something out of place.

The internal combustion engine is not such a novelty after all; one was in operation in Cambridge, England, in 1820.

Air Tire for Three-Ton 'Buses.

London's motor 'buses, or some of them, at least, will possess the unique feature of being pneumatic tired, contrary to the usual practice where such heavy vehicles are concerned. The impracticability of fitting a pneumatic tire of the usual type to such conditions is self-evident, so the makers—the Palmer company—have not only designed a tire of a peculiar cross section, specially adapted to bear a heavy load, but also a felloe to correspond.

The peculiar shape of the inner tube when inflated will be noticed by reference to the illustration, this odd form resulting from the contour of the felloe, which it partly surrounds. The latter is composed of three steel rims, the central one of which is on a curve of larger diameter than that of the



outer two. This enormous tire, probably the largest pneumatic yet attempted, has a tread of ten inches, this being reinforced by three heavy parallel ribs on the outer cover. The heads, of the usual Palmer construction, are secured to the felloe by flanges and bolts. The construction in other respects is along the lines developed by the same firm in their tires for touring purposes, the "airless cord" fabric being employed.

This huge tire is designed to carry a load of three tons per wheel when inflated to a pressure of 100 pounds per square inch. Though approximately semi-circular in section, the latter is apparently flattened to an extent that will cause the slightest amount of deflation to permit the tread and rim to come together under shock. The experiment of adapting the pneumatic tire to such heavy service seemingly does not hold forth sufficient promise of improvement to offset the additional expense incurred, so that its performance in the case under consideration will be watched with interest.

Ball Bearings for Heavy Loads.

One of the shortcomings of the ball bearing when used for heavy work arises from the fact that the balls comprising the friction absorbing element have but one point of contact. When the speed attains a certain velocity the amount of friction centred on this small surface is apt to cause abrasion, resulting after a time in loss of the exact globular form essential, by a flattening at the point in question. On a bicycle this is practically a negligible quantity in well designed and properly constructed bearings, owing to the small load, but in a heavy car it is apt to be more noticeable.

A modified form of ball bearing, designed with a view to overcoming this objection, is the subject of a recent German patent. In this the balls do not come in contact, but are separated by intermediate pieces composed of spiral springs and end plates, upon which the balls bear. In order to make this bearing surface as large as possible these end plates are recessed to correspond to the end segment of the ball, the centre of this recess or cavity being eccentric to that of the end plate itself.

But it is very difficult when assembling the intermediate pieces so to connect the ends of the springs with the plates that the ends of the springs placed in the spaces, or openings, provided for this purpose, and the centres of the recesses shall lie in the same vertical plane; moreover, in consequence of the compression of the springs in action slight distortion and consequent injurious twisting of the springs would be unavoidable, so the device has been adopted of attaching one or both ends of the springs to the plates to allow for a certain amount of torsion with relation to each plate, so that the turning of the latter will not affect its counterpart. This is accomplished by providing a longer slot in one or both end plates for the reception of the end of spring.

Countryman's "Horseless Carriage."

It is a well known fact that the great bulk of patents in this country originate in the backwoods and country districts. Unfortunately, however, few of these devices are of any importance. Most of them are for trivial devices or for impracticable ideas bred from the narrow lives of the patentees and their limited experience with the mechanical appliances of the day. A case in point is a horseless carriage—it could hardly lay claim to the name automobile—in which the motive power originates in the muscles of its occupants. As the inventor explains, his object is to provide "a vehicle that is easily controlled and one which is adapted to be propelled by one or two persons." With seeming ingenuity he has embodied in his invention adjustable seats to facilitate "the simultaneous effort of two persons of different sizes in the propulsion of the vehicle." Except for this feature and the gearing of the foot propelled crank shaft with the rear axles by means of a bicycle chain device, the buggy sized vehicles does not differ essentially from an enlarged edition of a baby's tricycle. It might be added, the inventor does not expect to make a fortune by his invention.

Brewers to Use Motor Wagons.

"Horseless vehicles will mean a considerable saving in expense to the company" is the opinion of the Furniture City Brewing Co., of Grand Rapids, Mich. In future four motor wagons will be used by the company for the delivery and hauling of its product.

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SPOILED COL. GREEN'S RACE

Crankshaft Breaks on "Other Fellow's" Car, and Oldfield and Lesser Lights Shine.

Owing to the breakage of the crank shaft of J. Howard Hughes's Peerless car, the feature of the Dallas meet—the fifty-mile race between Hughes's Peerless and Colonel E. H. R. Green's Pope-Toledo, scheduled for last Saturday at Dallas, Texas—had to be called off. It will be held this week, Saturday, March 4. Barney Oldfield appeared, however, gratuitously, it is stated, and attempted to reduce the record, but failed.

The events were run at the Fair Grounds track. Oldfield's trial with his 60 H. P. Peerless was at three miles against time. The first mile was made in 1:08 3-5, and the second mile in 1:07 3-5. In the third mile the engine started to miss explosions, and the time was much slower—1:09 1-5. Later Oldfield tried again and made the first mile in slightly better time—1:06 2-5. In the second and third miles the engine missed badly, and the total time for the three miles was run up to 3:25 2-5.

The interesting event was a five-mile handicap, in which three cars started. Ollie Savin, with a handicap of 0:35, driving a 35 H. P. Pope-Toledo, was the winner, in 6:33 1-5. J. Howard Hughes, driving a Peerless touring car, was second, and Barney Oldfield brought up the rear. Summary:

Three miles, open—S. H. Boren, Franklin, first; Dr. E. E. Wilson, Franklin, second; George A. Titerington, Ford, third. Time—6:29½.

Three miles against time—By Barney Oldfield, in 60 H. P. Peerless. Times—First mile, 1:08 3-5; second mile, 1:07 3-5; third mile, 1:09 1-5.

Five-mile, Texas Handicap—Ollie Savin (0:35), Pope-Toledo, first; Howard Hughes (1:00), Peerless, second; Barney Oldfield (scratch), Peerless, third. Time—6:33 1-5.

Three miles, "filler-in"—S. H. Boren, Franklin, first; E. E. Wilson, Franklin, second; G. A. Titerington, Ford, third. Time not taken.

Three miles against time—By Barney Oldfield, in 60 H. P. Peerless. Times—First mile, 1:06 2-5; second mile, 1:09 3-5; third mile, 1:09 2-5.

Louisville Calls for Numbers.

Louisville (Ky.) aldermen have an ordinance under consideration regulating the speed of automobiles within the district bounded by the river, Preston and Fifteenth streets to eight miles an hour. Beyond this district twelve miles an hour will be tolerated within the city limits. The ordinance further provides that all automobiles carry a number prominently displayed on the machine corresponding to the number of the license required before he is allowed to operate the car on the city streets.

Each automobile is to carry a white light in front and a red light in the rear when being run on the streets at night, and while a car is standing unattended on the streets the motor must be stopped. It is stipulated in the ordinance that the section referring to license numbers does not apply to machines owned by non-residents.

Briggs, of Maine; His Bill.

Representative Briggs has introduced a bill in the Maine Legislature providing for the registration of automobiles and motor bicycles. The bill provides that no automobile or motor bicycle shall, after June 1, 1905, be operated on any public highway unless registered, and the registered number shall at all times be plainly displayed on the car. Registration shall be made at the office of the Secretary of State, and the fee shall be $3. The certificate shall not be transferable, and a new registration shall be required upon the sale or transfer of ownership of any automobile or motor bicycle.

The act shall not apply to machines owned or operated by non-residents of the State. Penalties for the violation of the act shall not exceed $25 for the first offence and not exceed $50 for any subsequent offence.

Non-Residents Worry Cleveland.

New automobile laws will be passed by the City Council of Cleveland, Ohio, if City Clerk Witt has any voice in the matter. Under the existing ordinance a visitor coming into the city pays $1 and gets a local license. Generally when he leaves the city, it is alleged, he turns it over to some one else, which has occasioned considerable confusion. Witt will ask that the ordinance be amended so that a non-resident automobile owner be compelled to pay $5 for a license, the money to be returned when he leaves the city, if the license and number are returned. He will also ask that the carrying of two numbers on a car at the same time be prohibited.

Dewar Cup in a Whiskey Shop.

It may be that love of sport inspired Sir Thomas Dewar's gift, but, if so, his American representatives are turning it to the advantage of his business. The $2,000 cup which was won by Lewis S. Ross at the Florida speed carnival now forms the centrepiece of the display in the window of the Dewar whiskey shop on Broadway, New York. The facts that it is the gift of Sir Thomas and that it cost $2,000 are duly placarded that none may overlook them.

Prince Offers a Prize.

One hundred dollars reward has been offered by the Prince of Arenberg for the best arrangement for protecting the head from cold when driving. Those intending to compete must send in the design to the Automobile Club of France. No scheme will be considered which prevents the driver from hearing or giving signals to other drivers.

St. Paul Automobile Club, of St. Paul, Minn., has elected the folowing officers for the present year: President, L. A. Wood; vice-president, George E. Knocke; secretary, B. A. Ledy; treasurer, J. S. Bryant; trustees, T. W. Short, R. C. Wright and R. M. Neeley.

SCOVEL BILL STRIKES SNAG

New Jersey's Pickpocket Measure Sent Back to Committee and Public Hearing Ordered.

Assemblyman Harry S. Scovel's plan to pick $5, in the form of an annual license fee, from the pockets of all automobilists who use New Jersey roads, and to force them to plaster their cars fore and aft with conspicuous numbers, and to permit any old constable to haul them before a magistrate at any time, without a warrant, and get "soaked" $50 or imprisonment, or perhaps both, as "his judicial highness" prefers, struck a snag when it tried to pass the Assembly on Tuesday morning. The opposition was such that the measure was recommitted to the Committee on Municipal Corporations, which will give the automobilists a chance to defend themselves at a public hearing on Tuesday, March 7, at noon, at the State Capitol, Trenton, N. J.

Mr. Scovel thinks his constituents are demanding the passage of such a law, and he is using every means at his command to gain the votes of the fellow-solons to gratify his rural constituents' desires. Although lawmakers from other sections of New Jersey are less interested in automobile legislation than is Mr. Scovel, yet they are willing to vote for the obnoxious measure in exchange for assistance to some of their own pet schemes. Therefore Scovel may be able to force the measure to an issue by this power he holds over his associates.

The opponents of the bill, however, are determined to bring about its defeat, if not in either the House or Senate, then by the veto of Governor Stokes. Apropos of this, the Governor has received a deluge of protests from automobilists, real estate owners and brokers and manufacturers from all sections of the State, imploring him to veto the measure if it works through both houses.

Tales of Queen Margaret.

The Dowager Queen of Italy has lately given proof of her passion for automobile riding by making a trip from Rome to Turin, a distance of four hundred miles, for the purpose of viewing the automobile show.

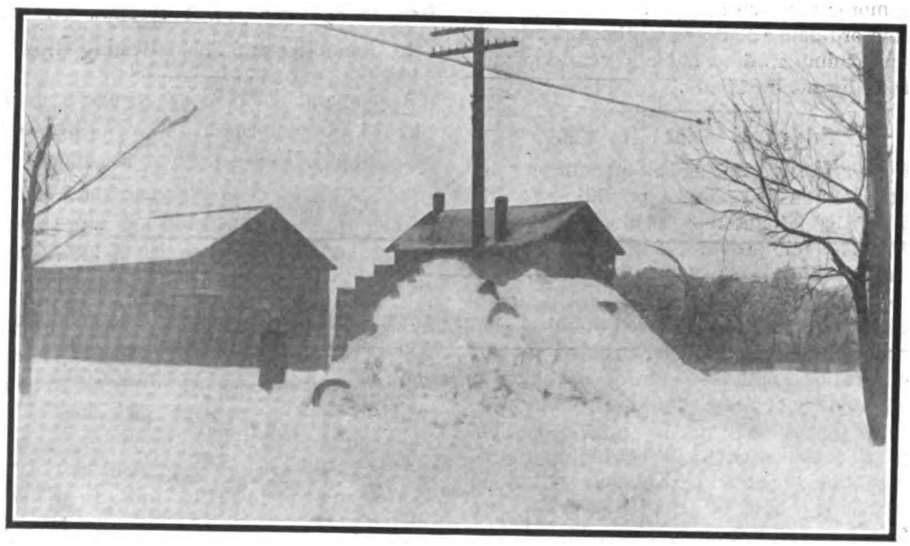
The interior of the car shows the Queen's devotion for the saint credited with being "the protector of automobilists." In the carriage is a large silver medallion of St. Christopher crossing a river with the child Jesus on his shoulders.

Queen Margaret has had several gold medals bearing the same figure made, and has distributed them to the royal chauffeurs and the members of the royal family who are automobilists.

Twelve men are employed as chauffeurs in the garage, under the personal supervision of an experienced director, and each wears a blue uniform designed by the Queen. She encourages home industries by having six different Italian types of cars.

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Look on This Picture



Packard Car With a Snow Plough Clearing the Road Near the Factory in Detroit.

Owner Not Liable for Chauffeur.

The idea that the principal is responsible for the acts of his agents received a setback last week. The point is of special interest to automobile owners because of the too prevalent practice of chauffeurs using their employers' cars without permission, and too frequently of using them to indulge in midnight carousals.

The case in point is the decision of Judge Walsh, in the Gates avenue municipal court, Brooklyn, N. Y., who on Saturday last dismissed an action against Charles B. Dillingham by Louis Reuge. Reuge's son was knocked down and injured by Dilingham's car while it was in charge of his chauffeur, E. Ganley, who was taking some of his friends for a spin. The number of the car was taken at the time of the accident, and later a suit for damages was instituted against Dillingham as the owner of the car which ran down the lad.

Dillingham testified that Ganley had taken the car without his permission or knowledge; in fact, he had not even heard of the accident until he was served with a summons in the suit. Judge Walsh ruled that the owner of an automobile cannot be held responsible for damages when the car is in charge of a person or persons without the authority of the owner, and accordingly dismissed the suit.

Doctors at Dinner Discuss Autos.

The automobile as an auxiliary to the successful physician was exploited at the annual banquet of the Practitioner's Society of the Oranges, held last Friday night in Newark, N. J.

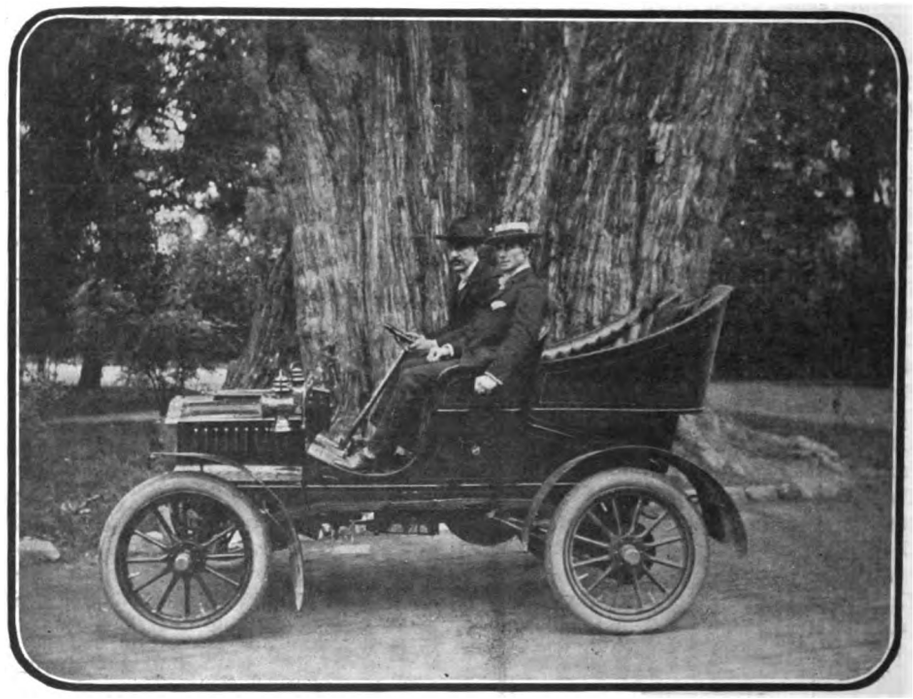
Winthrop E. Scarritt, former president of the Automobile Club of America, declared in his speech, which was the principal address following the dinner, that in the course of a few years the physician who does not own an automobile will be as much out of date as the surgeon who does not use aseptic methods.

Mr. Scarritt spoke on the subject "The Doctor on Wheels," He said that in these days all is motion, all is action, and the automobile was indispensable to the physician in making his hurry calls. He closed his address with the prediction that within a year one out of every twelve hundred persons in the country would own an automobile.

For a Tug-of-War Between Cars.

Minneapolis (Minn.) dealers are planning a novel contest—an automobile tug-of-war—in connection with the annual Kenwood hill climb. A discussion between A. C. Bennett and Harry Pence last week concerning the relative pulling qualities of the cars they represent ended in both men agreeing to a pulling contest between a Winton and a Packard car. Other dealers, learning of the plan, thought it a good one, and the contest will become general. The terms of the match call for the disconnection of brakes, for tires without non-skid covers, and for each car to be equipped for touring. The contest is to be held on a level piece of ground, the cars to be tied back to back by a cable to each rear axle. The start will not be made by a jerk, the match not being declared on until both machines are pulling steadily.

And Then on This One.



Demonstrating an Oldsmobile in Mexico City.

Cincinnati Outlines a Busy Show.

A clubhouse and garage, an automobile parade, a series of races and a hill climbing contest figure in the plans of the Automobile Club of Cincinnati, Ohio. The clubhouse will cost, approximately, $100,000, if the dreams of the members are converted into cash. It is planned to erect the garage on Seventh street, between Main and Walnut streets. The automobile parade is booked for April, but the dates for the races and hill climb have not been set.

The Automobile Club of Leroy, N. Y., has been organized, with these officers: President, Harold B. Ward; vice-president, D. C. H. Prentice; secretary and treasurer, Dr. Lee Skinner.

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SPARK PLUG STABILITY

The One Part of the Ignition System that has Defied Radical Change.

One of the few important things about the motor that has seemingly both been let severely alone by the car builders and also has succesfully resisted every effort to improve it out of all semblance to its original is the spark plug. How small an item of the completed engine's make-up it is, but how helpless the most perfect motor ever made is without it!

The engine builder has known all along exactly what was required to make a perfect spark plug, has realized only too well just what its elements should be—impervious, non-breakable insulation, absence of sooting, oil proof and of reasonably long life; but in the light of his many troubles it is not at all to be wondered at that he has left the solution of the problem almost entirely in the hands of the specialist. The latter was familiar with the electrical side of the question, and, so far as theory went, encountered no difficulty in producing a perfect article right from the start—that is, where design was concerned, for in this respect the plug of to-day does not differ in any essential from its earliest predecessors. But conditions prevailing in practice were such as had never previously come in for attention; vibration, oil and soot were factors, the destructive qualities of which had been very much underrated. The first frequently succeeded in giving a new plug its quietus in a very short time by cracking the porcelain, and when the latter broke and dropped into the cylinder there was trouble, unless that cylinder head came off—and many then didn't have that kind—getting a view of the inside of the cylinder meant starting from the other end and practically dismantling the engine. Oil has two effects, both equally pernicious and productive of cuss words. Au naturel it is a most efficient insulator, and a few drops of the lubricant on the points make no end of trouble for the man who doesn't know where to look for it. Carbonized, there are few better conductors, and a short circuit is far worse than none, for the dry cells or accumulators are prone to give up their life during the course of the investigation. If the latter consumes a great deal of time they have "laid down" completely, and consequently will not respond when the trouble is finally located, so of the three evils, sooting doubtless gives rise to the greatest amount of wrath and hard feeling on the part of the man who has to toil at the crank.

Unconsciously perhaps, but, nevertheless, quite as effectively, the man who drives the car is responsible in large measure for this greatest of evils, for it can almost invariably be traced to the lubricating oil—too often it is not of the right quality and begins to carbonize as soon as the motor is well under way. Continuing to feed it to the cylinder sooner or later cakes up everything, and this effect will be most noticeable in the exhaust passages and muffler, which gradually become obstructed. The only remedy is a thorough cleaning of the accessible portions and flushing with kerosene or gasolene if the cylinder is not opened. But it is not necessary to wait until such a condition has been brought about before applying the remedy—it will reveal itself from the start in the black smoke emitted at the exhaust, and can be prevented before harm is done.

Porcelain is without a superior as an insulator, and has survived to this day in the plug despite the tendency to fracture, though the latter is no longer the constant source of annoyance it once was. Mica has, however, come into very general use during the last two years, and has many advantages to recommend it. Following the lead of foreign makers in this respect, plugs insulated by layers of mica transversely placed, put together under very heavy pressure and then turned true in a lathe are now very common here. They are generously shellacked as a finishing touch, and this, together with the great pressure under which the insulating core is formed, tends to reduce the amount of moisture absorbed to a negligible quantity. A capacity to withstand shocks fatal to the porcelain plug often before it is put on the engine is probably one of their chief virtues.

Despite the thousand and one so-called improvements that have been brought forth during the last five years in the way of "an always sure-fire, last forever plug," the simonpure article of original design still reigns supreme, and it would be a difficult matter to find anything else on this year's best cars, small or large. Of course, important innovations that merit attention have been introduced and have stood the test of time, but they are one and all little more than additions to the old groundwork, adopted principally to aid in the prevention of sooting.

The perfect plug, like the perfect man, is not yet, so the shortcomings of the present day article should be recognized, and, instead of howling against it, tie a rope around the finger as a reminder to put an extra one in the tool box before starting on a tour, or, as a humorist has it, invent a phonographic attachment to the car which calls the driver's attention to this little essential at the right time.

Widow Wants Large Mite.

As a sort of afterthought of the fire which destroyed the assembling rooms at the Cadillac Automobile Co.'s plant at Detroit, Mich., on April 13, 1904, Margaret E. Overbrook, a widow, who was employed in the factory at the time of the fire, has brought suit against the Cadillac company for $25,000 damages for injuries received. The plaintiff, who was working on the third floor of the building when the fire started, claims that her life was saved by her brother, who dropped her to the ground from the third story window. She claims to be permanently injured, and therefore holds the automobile company responsible.

STEEL FOR TRANSMISSIONS

The Efforts to Find Most Suitable Material—Frenchman Evolves a New Compound.

Of all the problems which confronted the pioneers in automobile building, the question of transmission long proved a stumbling block and the crude methods—or possibly the great difficulty—in obtaining metal which would withstand the strains imposed upon it by the new hand at driving, who would insist upon reversing without freeing the engine, was one of the most prolific sources of discouragingly high repair bills. Transmissions have been improved wonderfully since that day, and there are likewise now men who would not think of trying to reverse at full speed with the clutch in, no matter what the emergency, but probably the improvement in the quality of the steel used is responsible to a greater extent for the routing of the bugbear of stripped gears than any other.

The sliding gear transmission is a piece of mechanism at which the engineer has held up his hands, but, all theories to the contrary notwithstanding, it has survived despite its latent defects and until something which holds promise of very much greater efficiency appears, will doubtless hold first place in the estimation of a majority of heavy car builders. It is interesting to note the various stages which transmission gears have passed through before reaching their present state, and in this connection to advert to the new steel for this purpose recently placed on the market by a French inventor.

The ordinary cast gear very soon proved itself to be utterly inadequate for the purpose, and was shortly followed by the use of machine-cut gears of mild or cast steel, and while this probably marked a step in advance, it, too, fell far short of the unusual requirements. Probably just what the latter were had not been fully recognized up to that period—except that the gear that would not chip was from the first the great desideratum. It was then seen that not alone a hard surface was essential, but also a yielding interior, and to attain this end case hardening was resorted to, but results, owing to an imperfect knowledge of the best methods of performing this operation, were far from uniform or satisfactory. However, the drawback was soon found not to consist solely in the handling, but in the steel treated, and some classes of nickel chrome steel were produced that seemed specially fitted for the case hardening process, while others did not require it at all.

The most remarkable characteristic of the new French steel referred to is that it combines exactly the qualities sought for all along—the property of becoming harder and tougher with wear, strain and friction invariably resulting in crystallization and fracture in the ordinary metal. In the process of manufacture, this steel is carburised in the ordinary manner by heating in boxes

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with the usual case hardening substances, a temperature of 1470 F. being maintained for about seven hours. The greatest advantage of the process comes in here, as there is no necessity for quenching in water, and the distortion incident thereto is avoided. The parts are allowed to cool slowly, when they become quite hard. The physical tests of this steel are as follows: Tensile strength, 33.4 tons per square inch; elastic limit, 24.8 tons per square inch; elongation in 2 inches, 31 per cent., and contraction of area, 69.5 per cent. The sole rights for France have been purchased by one of the leading automobile makers of Paris, and the performance of cars fitted with gears of this new material will doubtless be watched with interest during the coming season.

Farson Out; Police Get Busy.

Convinced that the uncompromising hostility of its president to the numbering and licensing of automobiles would put the Chicago Automobile Club in an unenviable position when it begins its campaign for State registration of cars, the board of directors of the club last week accepted the resignation of John Farson as the president, to take effect March 1.

At the beginning of the year Farson filed his resignation with the board of directors, to take effect March 1. Ordinarily the board would have taken no action in the matter until the latter date, but, convinced that the attitude of he club should be fully understood by the public at once, the directors on Wednesday decided to accept the resignation without delay.

To succeed Mr. Farson, Ira M. Cobe, who is described as a "cool, level headed man," was chosen, W. G. Lloyd, the second vice-president, was elevated to the first vice-presidency, and the office of second vice-president was left open.

In view of the fact that the directors of the club expect the legislature to pass a bill removing the control of automobiles from the jurisdiction of municipalities to that of the State, they are little concerned about the decision of the Appellate Court dissolving the injunction recently issued by Judge Hanecy, in the Superior Court, restraining the city from enforcing its ordinances concerning the licensing and numbering of automobiles. As a matter of fact, about 97 per cent of the members of the club have taken out numbers from the city, although the injunction issued by Judge Hanecy prevented the city from compelling them to do so.

As the result of quashing the Hanecy "midnight injunction," the police were notified to look for all unlicensed cars. A. C. Banker, who was one of the most strenuous in opposing the original ordinance, happened by chance to be the first man caught. He was fined $10. Four others who had probably not heard of the quash were also caught the first day, but after that the police could not find a single car without a license.

Automobilists of New Orleans, La., will soon have a new country club and garage if plans of the automobile club do not go amiss.

WANTS A CLUBHOUSE

Movement Started at Newark Club's Banquet —Scovel Bill Discussed and Denounced.

Transmission gears and sprockets, brakes and spark plugs, motors and carburetters and all the other intricacies which make automobiles go were relatively discussed at the second annual banquet of the New Jersey Automobile and Motor Club at Newark last Thursday night. Later more serious speeches were made upon topics of interest—the Scovel bill, now pending in the legislature, and a new clubhouse.

After the feasting Frederick Platt, president of the club, who acted as toastmaster, made an address of welcome. His speech was in a reminiscent vein, and as he told of his first automobile and the experiences he had with it he was greeted with sympathetic laughter. Mr. Pratt's stories about the first chauffeur whom he engaged, who knew absolutely nothing about the workings of a motor, but was an expert at cleaning the brass work and tooting the horn, seemed to find favor with his hearers. The club had shown a remarkable increase in membership, the president said, and was now the third largest in the country. At this time last year 139 members were on the rolls, and up to Thursday night it was announced that the number had been increased to 425.

Richard C. Jenkinson, who was the next speaker, devoted his time to a criticism of the Scovel bill. The deepseated aversion to automobilists which country constables and their colleagues, the rural justices of the peace, entertained, the speaker declared, would make the power of arrest without a warrant a dangerous one and would threaten the welfare of the sport in the State. Mr. Jenkinson urged that the club itself adopt speed regulations, with a severe penalty for their violation. If the citizens saw that the club was acting in good faith in the matter the attempts of the rural classes to secure the passage of more stringent laws would cease.

Dr. H. Crittendon Harris spoke in a similar vein. He suggested that a circular letter, signed by the twenty-five hundred registered automobilists, all intelligent voters of the State, be sent to the legislators.

A new clubhouse was the theme of Bernard M. Shanley's talk, and he put in a vigorous plea for a place where the members could meet and talk over their pleasures and troubles. The club, the speaker said, was larger in point of numbers than many clubs owning houses, and he urged that the same enthusiasm be shown in carrying out the clubhouse movement which was manifested in the efforts to increase the membership.

As B. M. Shanley owns a large portion of Newark, the selection of a suitable site for building purposes ought not to bother the building committee.

Hunter Heads New Jersey Club.

At the annual meeting of the Automobile Club of New Jersey, on Friday last, the following officers were chosen for the ensuing year: President, W. B. Hunter; vice-president, C. E. Reiss; secretary-treasurer, G. Franklin Bailey; governors, Winthrop E. Scarritt, James B. Dill, Dr. W. Quivey, Isaac H. Blanchard, A. J. Lamme and George H. Jacobs.

As an effort is making to organize a State association of automobile clubs, the New Jersey club appointed President Hunter as its representative to attend any meeting for the purpose that may be held. Also as the club was one of the founders of the American Automobile Association, and has always been one of its most loyal supporters, and having recently acquired clubrooms in Brick Church, East Orange, which have garage facilities, it voted to extend the privileges of its quarters to all other A. A. A. clubs.

Janesville Organizes a Club.

The Janesville (Wis.) Automobile Club has started well. Over fifty men signed the charter roll last week, when the following officers were elected: President, Dr. R. W. Edden; vice-president, A. G. Anderson; secretary and treasurer, F. H. Blodgett. The object of the new club, as outlined by its president, is "to promote good fellowship among automobilists, but more particularly to foster good feeling between them and others with whom they share the use of the public highways."

"We recognize the fact that the only way to accomplish this end is to unite with all the horse owners in seeing that the laws governing the speed of automobiles are carefully observed," says Dr. Edden. "Each member of the club has pledged himself to observe the laws, to be courteous to the horse drivers and to do all in his power to avoid accidents. Any member who does not live up to these standards will be expelled from the club."

How They Stopped the Horse.

Here is a brand new stunt, and none the less interesting because the story emanates from Brooklyn. As a man and woman were driving along Coney Island Boulevard the other evening their horse suddenly took fright at an automobile which was approaching from behind, and bolted, tearing the reins from the driver's hands. The motorists, seeing the imminent danger, raced the maddened animal for some distance, till, running along beside him, one of them managed to grasp his bridle and hold it until machine and horse could be brought to a standstill. Neither of the occupants of the carriage was injured and no damage was done to the outfit. Surely this should be handed down to posterity as a bit of very clever car handling and an heroic act.

Thief Steals an Electric.

Indianapolis, Ind., had its first automobile theft last week, and Dr. C. B. McCullogh is the loser. He left his electric runabout in front of his office, from where it was taken and the police have since been unable to find a trace of it.

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Successful Car Building.

WE are this year standing firmly on the fact that we have built a real car, because we have built a car adapted to American conditions, American roads and the American temperament. We know our American market as no French builder can know it.

We have surmounted the problems of car-building this year as we never surmounted them before, although our progress has been steady and on right lines.

We believe the Pierce car to-day expresses the best that can be had in car-building, and we are willing to abide by the result of actual experiment.

Booklet describing the six 1905 cars of the George N. Pierce Company, with special booklets describing the mechanism of each, will be sent on request.

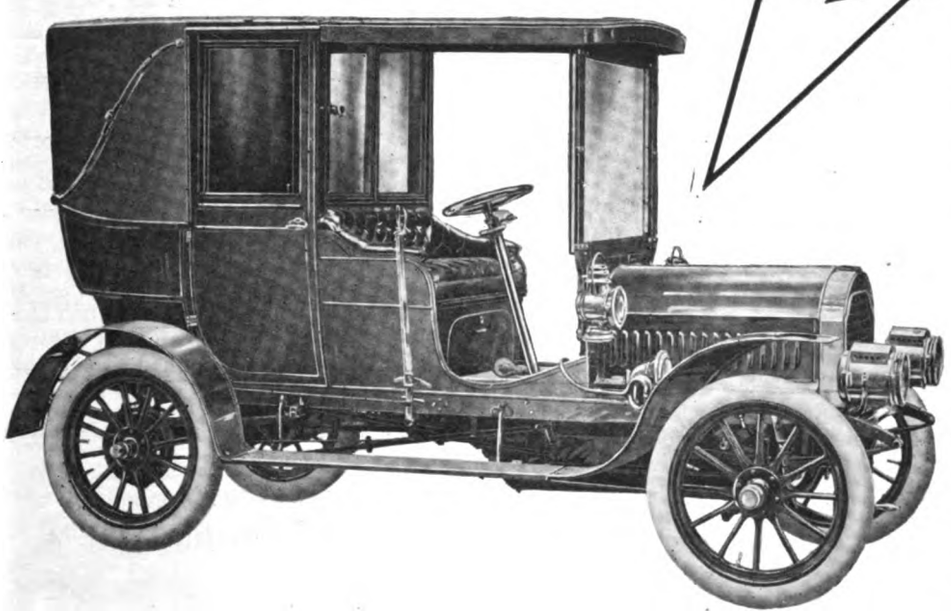
The George N. Pierce Company,

BUFFALO, NEW YORK.

Manufacturers of Pierce Cycles.

Members of the Association of Licensed Automobile Manufacturers.

The 28-32 horse-power Pierce Great Arrow Landaulet body by J. M. Quinby & Company. **PRICE, $5,000.**



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J. A. PLACE, Geneva, N. Y.

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THE SHEPARD CO., Providence, R. I.

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In the Retail World.

L. W. Welch has taken the Grand Rapids, Mich., agency for the Thomas cars.

Russell Dricks has taken the Boston, Mass., agency for the Stevens-Duryea cars.

Harry Pence, of Minneapolis, Minn., has opened a branch store and garage at Fargo, N. D.

Frank Anderson, agent for the Rambler cars at Aurora, Ill., has removed his salesroom and garage to No. 113 Main street, to secure much needed elbow room.

W. D. Vandecar has withdrawn from the Richmond-Vandecar-Jarvis Automobile Co., Grand Rapids, Mich., and will embark in business for himself in that city.

Thomas B. Jeffery & Co., Kenosha, Wis., will build a two story salesroom and garage, 60x111 feet, on Sheridan Road, near Wilson avenue, Chicago, Ill. The structure will cost $20,000.

Altoona Motor Car Co. is the name of Altoona, Pa.'s., first automobile company. Ralph Rohrer, Harry Morgan and M. C. Sperry, the organizers, have opened a garage at No. 712 Breen avenue.

Following in the footsteps of Eastern cities Minneapolis is to have an automobile livery. H. G. Gooseman is the promotor of the enterprise. The garage will be located at No. 6 East Grant street. Eight large touring cars will be in use during the summer, and in the winter limousines will be employed.

The Winton Motor Carriage Co. has leased for a period of ten years the property No. 1,253 to 1,261 Michigan avenue, Chicago, Ill. The rent will not be less than $6,000 a year nor more than $10,000, and in addition the Winton firm agrees to pay 8 per cent on the total cost of a new building, not to exceed $63,750.

Need of a larger establishment has forced Moulton & Jordan Co., Minneapolis, Minn., agents for the Peerless cars, to lease a site on Fourth street, between Second and Third avenues, south, where a new garage will be erected for their use. It will be a two story brick building, 160 feet long, with a frontage of 40 feet, and will cost, approximately, $15,000.

Here's the "One Man Show."

Here is a story of a "one man show" with an automobile as its only excuse for existence. It comes straight from France, the proud owner of the car being a French theatrical man who "does the provinces." During the day the automobile carries the properties and the company, manager, electrician and lecturer—all one, by the way—and at night the motor is pressed into service to run a small generator which supplies sufficeint current for an arc and several incandescent lamps to illuminate an impromptu theatre and the cinematograph as well, which is the whole show, and that it is an economical one is plain.

Test of Tire Detachability.

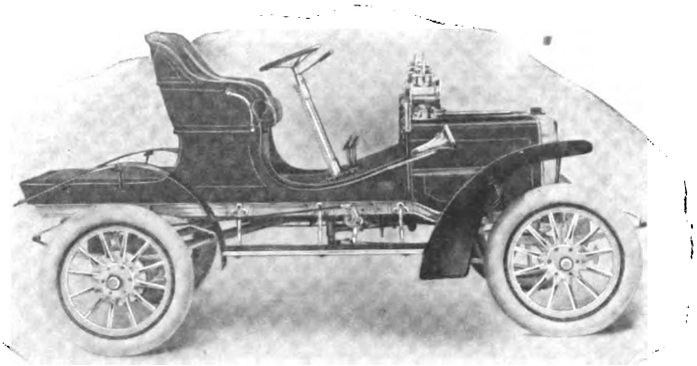
Both an interesting and instructive feature of the London and Berlin shows was a tire fitting contest inaugurated by the makers of a particular tire. Needless to add, it proved a drawing card that banked the spectators ten deep around the booth while going on.

Primarily its object was to demonstrate the ease and rapidity with which a punctured tube of the make in question could be replaced on the road by a spare. To this end several prizes were offered, and the competition was open to all chauffeurs. The only requirements were extracting the punctured inner tube, replacing it with a new one and inflating in the shortest time. There was no lack of contestants, and on the average ten minutes was consumed in the operation. The record for the English show was 6 minutes 41 4-5 seconds and at Berlin 6:30.

Londoner's Bid for Business.

An English builder of commercial gasolene vehicles has devised a unique moving exhibit to advertise his wares in London. A heavy car was fitted with a box stall, bearing the sign, "Unemployed. Passing of the horse," and in it was placed a specimen of the equine race, known to automobilists as a "corn beef" motor, and which scientists tell us is bound to become extinct in the future; just when is not certain; probably it will be coincident with the exhaustion of the coal supply, which is definitely predicted by the Sunday newspapers for five million years hence.

NORTHERN



Two-passenger NORTHERN Touring Car with rear luggage platform; 18 h.p.; 100 inch wheel base; 4 inch tires.
Price, $1500.

NORTHERN construction is absolutely unique. It stands apart. It is a marvel of simplicity, compactness and strength.

The word "simplicity" has been much abused by automobile manufacturers.

When used in connection with NORTHERN mechanism it means **exactly** what it says. No other car made demonstrates to such a degree the merit of real simplicity.

All machinery is instantly accessible. There is only one universal joint. There are no belts, chains, or gaskets. No strut rods or truss rods. No confusing array of wires, etc. Power is applied direct to rear axle.

The STURDY NORTHERN Runabout. 7 h.p. **Strong,** speedy and reliable. The handsomest and best finished machine of its class. Now sells for $650.

Are you interested in cars that bring the buyers "no expense but the gasoline?" Write for Catalogue.

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ABOUT ROTARY ENGINES

Why they Hold Fascination for so Many Inventors—The Promise Held by Turbines.

Ever since the days of Hero's engine, inventors and engineers have been striving to devise some practical form of motor in which the turning effort should be uniform and free from intermittent pulsations. This will-o'-the-wisp whose torque or drag on the driven machinery is unvarying throughout each revolution and from revolution to revolution, and which is at the same time entirely practical, compact and durable, has led many a persistent investigator a merry dance to no purpose. But others have been more fortunate, and their labors have been well rewarded.

One of the most primitive forms of the steam engine consisted of a spherical vessel mounted on horizontal trunions over a fire. From opposite sides extended two tubes which terminated in jets turned at right angles to them. When filled with water the reaction of the steam escaping from the jets caused a rapid rotation of the affair by its reaction. A mere toy in itself, it was the archetype of the most efficient of all steam engine, the turbine.

The principles of impact and reaction were studied for centuries in the windmill and the water wheel, until at last motors were produced which satisfied the demands made upon them. And the laws developed in their making have since been turned to the more difficult application of elastic heated vapors.

Meanwhile, the reciprocating piston engine was developed, and its improvement kept pace with the needs of the world, until the evolution of electrical science brought forth a motor whose compactness and handiness, as well as its smooth action, recommended it at once to all sorts of uses. It seemed that nothing more was to be desired. But a serious drawback presented itself in its dependability. It must be connected with a source of supply at all times. There was no such thing as a storage of electricity. An approximation to it, an apparent storage of the fluid, was presented in the accumulator. This, efficient and serviceable though it be, has yet to be reduced to an ideal form. For some uses its value is indisputable, but for those involving considerations of its weight and bulk, even leaving out the all important item of cost, it is at present far from satisfactory. Its extension to its broadest field of usefulness is held in abeyance for the coming of certain much needed improvements.

Not until within a very few years was any form of rotary engine made practical. But to-day the turbine stands in ever increasing utility, a monument to scientific mechanical evolution. Its best form, however, is adapted to heavy work, for it has yet to be produced in a practicable form for small powers. And here it falls short of the demand, for all along the effort has been to secure a motor of even torque which should be neat and simple and thoroughly adaptable for small powers in a variety of ways. The needs of small, isolated plants, the well defined advantages of the multiple-unit system of power supply, in which several machines are driven independently of one another at a saving of the energy used were they handled as an aggregation, and last, but not least, the need of a compact, independent engine for the motor vehicle, have created a growing demand for such a motor. And, instant though the demand may be, it has yet to be fully satisfied.

Considering the proposed solutions of the problem, the forms already in use, the best results so far obtained have been from the two and four cylinder compound steam engine, commendable for its smoothness of action and control, and from the four cylinder gasoline engine, which has the advantage in points of bulk and fuel economy. But, no matter how well balanced are the moving parts, no matter how well chosen the flywheels, the impulsive effort of the reciprocating pistons, particularly noticeable when the motor is overloaded, has a continual wear and tear effect on all the subjoined mechanism, which necessitates added weight and strength in all its parts.

Of the forms of rotary engine, there are five, all more or less practicable for the purpose. There are; the turbine, a derivative of the water wheel; the rotary piston engine, which may be compared to a single bladed impulse wheel; an inversion of this, in which the piston is stationary and the cylinder rotates about it, the internal action being the same; and the hybrid rotary reciprocating, in which several cylinders fitted with reciprocating pistons are arranged radically about the crank shaft. In this, as in the preceding type, either the shaft rotates or the whole cylinder casing turns about a stationary crank; the principle is the same in either case. These parent forms have given rise to almost numberless experimental models which have been worked up with more or less skill, and have yielded correspondingly successful results. In nearly every case the mediocre success or absolute failure of the affair has been due to purely mechanical difficulties. The theoretical considerations involved are at the present time pretty well understood, but their practical application must be worked out by rule of thumb in many cases. It must be a purely experimental result.

Now, the balance between drawback and advantage of any one of these types, the criterion of its adaptability, depends for the present on the results obtainable from it. For the future, it is largely a matter of conjecture.

As has already been said, the steam turbine in its best form is more efficient than the compound reciprocating engine. Records of authentic tests show, in many cases, an advantage of nearly a pound of water consumed per horse power. This, though comparatively slight, together with the advantages of its simplicity, diminutive size, and even action, place it on an equal footing with the older forms. As installed in lighting and power plants in several of the larger cities, it is yielding good results from the mechanical standpoint of reliability. But its action demands an enormous velocity—the present commercial forms running at speeds varying from 20,000 to 30,000 revolutions per minute—and this must be increased as the size of the engine decreases, since the peripheral speed bears a fixed relation to the velocity of the working vapor. Hence, it would be extremely difficult to construct a small sized machine which would work to advantage, because of the necessary speed reduction, and the tremendous centrifugal force which must be dealt with. Besides these, certain purely thermodynamic considerations make it seem impracticable to construct a small motor whose consumption would be at all rational. The low, or medium-powered, steam turbine is a thoroughly possible development of the present forms, but just when it will ripen, or whether a more satisfactory engine will appear before it is ready, cannot be foretold.

The gas turbine, occupying with regard to the steam turbine a position analogous to that of the two forms of reciprocating engines, is an inventor's dream. In theory it is wholly plausible. The subject has been well studied and considerably discussed in scientific circles from the standpoint of the ideal. But of practical results nothing has yet appeared. The high working temperature of the gas, coupled with the high speed required, make the problem very difficult to solve. And, again, considerations relative to its thermodynamics point to a probable poor rate of economy.

The rotary piston engine and its converse type is simpler than the turbine, in a way, since it deals with the direct impulse of the gas, and not with its reactionary effect. The steam is admitted behind the piston and forces it around until at a certain point it is cut off and a period of expansion allowed till the opening of the exhaust. The cycle is precisely that of the reciprocating engine. An engine of this sort is very compact, runs smoothly, and by coupling several cylinders together may be made to yield a uniform torque. But its drawback lies in the mechanical faults, due to leakage and excessive friction set up in an effort to reduce it. Of the numerous forms of rotary impulse engine which have been proposed, several have used a shaft eccentrically set in the casing. This necessitates some form of sliding piston, together with its attendant packing, and adds an internal mechanism which is likely to get out of order.

A like form of motor, usable for gas, either on the direct combustion plan or on the commoner two or four cycle order, may be produced at some future time. The difficulties against which it must struggle are, of course, dependent on the high temperatures and pressures involved. And they seem well-nigh insurmountable. However, the small motor

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of the future may come from this very source.

As to the rotary reciprocating type, the Brotherhood engine, an old leader, has been followed by many variously successful models of similar principle. Good results are obtainable, even in small motors; their turning effort is fairly even, and with the evolution of perfection in mechanical detail, they may ultimately rise to a position of importance.

In the gas field the same idea has been applied to air-cooled motors, in which the cylinders rotate about the crank shaft, and thereby receive a cooling effect, which is directly in proportion to the speed, and serve also as a fly wheel to balance the effort of the explosions. Of this type there is but one at present in the market.

The ideal requirements of the automobile engine are best expressed in the electric motor, which combines with its smooth working qualities a compact simple form, and a method of control which does not demand skillful handling. The steam turbine and that using gas as well would probably compare very favorably with it in weight and size, and also in control, except for the fact that the gear reduction would be greater and the reverse would have to be accomplished by some form of gearing. The rotary piston and rotary reciprocating forms would approach the ideal in lesser degree because of their added complexity.

Although it is satisfactory in many ways, the power plant of the average car of the day occupies an enormous amount of space. To one accustomed to the older forms of machine, this fact is not surprising. But he cannot but be impressed with the wonderment of the layman on seeing for the first time a car stripped of its outer covering. There is so much mechanism; there are so many delicate adjustments to be made, and there is such a multiplicity of levers and handles, that he is quite confused by the jumble of parts. The control alone involves the use of a number of levers, or else a few with complicated mechanisms, and hence the manipulation of a car demands a certain amount of technical knowledge and skill of hand which absolutely prohibits driving to some persons, and is to all an attainment of practical experience. Hence any simplification becomes a boon, both to the builder and the user.

The makers are working toward this end, and every year marks a step here and another there toward the the ideal machine. But there is a limit to useful improvement. A point may be reached where further refinement of detail would bring so slight an increase in returns as to make its adoption unwarrantable. Thus, from time to time, factors are being reduced to their lowest terms, and the designer turns from them to others which exhibit a greater need of improvement. After a time, however, other changes bring about different demands on the part, and it is no longer "good enough." So development goes on, as it were, by a succession of tentative steps. And the motor which satisfies the present need will not suffice for the car of the future. For this use the rotary engine, using steam or gas, may be regarded as an altogether attractive possibility.

N. B.

Another Point to Oil.

"Lubricate wisely but not too well" is such trite advice as now to suffer by further repetition, though its value is only too often overlooked, until the damage is done. But in the infinite variety of directions on this important point few have ever included an admonition to grease the springs.

The spiral spring is so lively on a rough road that its adoption for automobile use has seldom been attempted, and its limitations in this direction are too great to admit of success. The multiple leaf spring has come to be a universal standard for car suspension, as the friction set up between the plates is sufficient to counteract the plunging characteristics of the spiral type. But despite the close adherence of the leaves, dirt and water find their way between them. Rust will cause the friction to become excessive through the leaves binding, much of the value of the spring thus being lost. To guard against this the leaves should be pried apart and a little heavy grease rubbed between.

Michelin

Cut your tire expenses in half,

use Michelin.

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The Week's Patents.

781,897. Valve Device. James McGillivray, South Chicago, Ill. Filed August 24, 1904. Serial No. 221,973.

Claim—1. In a valve device of the character described, the combination of a casing containing two valve chambers, one of said chambers having a pressure inlet port and a pressure outlet port, and the other chamber having a pressure return port and a pressure discharge port, a hollow valve rotably confined in one of said chambers, having a port to register with said pressure inlet port and a port to register with said pressure outlet port, a hollow valve rotably confined in the other chamber, having a port to register with said pressure return port and a port to register with said pressure discharge port, and operating means for said valves connecting them together to be actuated simultaneously, substantially as described.

781,921. Gas or Fuel Engine. Elihu Thomson, Swampscott, Mass., assignor to General Electric Company, a corporation of New York. Filed February 14, 1898. Serial No. 670,222.

Claim—1. In a gas or oil engine, the combination of a cylinder space, a piston moving therein, an inlet valve for admitting a non-explosive mixture of combustible and air, a heated granular mass in open communication with the cylinder space through which the mixture passes during the compression and repasses during the power stroke of the piston, and an outlet opening from the cylinder for exhausting the burned products, substantially as described.

781,923. Internal Combustion Motor. Adolf Vogt, West Norwood, England. Filed November 4, 1901. Serial No. 81,086.

Claim—1. In an internal combustion motor in which the combustible charges are compressed outside the motor cylinder, and in which a horizontal cylinder with piston has vertical extensions at each end containing columns of liquid forming extensions of said piston, the combination with said cylinder extensions of discharge valves placed near the upper ends thereof in a position in which a portion of the liquid column can escape through it toward the end of the discharge stroke, means for holding said discharge valves open until said portions of liquid have escaped through them, and means for supplying fresh liquid to said extensions to replace the quantity discharged, substantially as described.

781,933. Motor Truck. William O. Brown, Chicago, Ill., assignor to Appleton J. Pattison, Toronto, Ontario, Canada. Filed May 16, 1904. Serial No. 208,264.

Claim—1. A motor truck mounting two axles, internal combustion engines secured at the sides of the truck, a single shaft actuated by the engines, and a flexible driving mechanism for each axle actuated by the engine shaft, substantially as described.

781,936. Carburetter for Hydrocarbon Engines. James J. Cook, Jersey City, N. J., assignor to Cook Kerosene Carburetter Company, a corporation of New Jersey. Filed July 22, 1903. Serial No. 166,630.

Claim—1. In a carburetter, the combination with a casing, of an upright vaporizing post located in the casing, an electrical heater coil wound upon the exterior of the post, and forming a spiral channel for oil projected against the post, and means for projecting oil against the upper end of the post.

781,944. Speed Reducing Gearing. John L. Hall, Schenectady, N. Y., assignor to General Electric Company, a corporation of New York. Filed September 3, 1903. Serial No. 171,718.

Claim—1. In a speed reducing gearing, the combination with a driving worm, of a stationary worm gear, a planetary shaft, a worm carried by said shaft and meshing with said gear, and a worm wheel meshing with the driving worm, and means actuated by the planetary parts for transmitting power.

781,959. Variable Speed Gearing. Stonay L. Langdale, St. Louis, Mo. Filed June 3, 1904. Serial No. 211,044.

Claim—1. In a gearing, a rotatable sleeve, a shaft inserted in the sleeve, a spring, one end of which is fixed to the shaft and the other to the sleeve, and a projection carried by the shaft and engaging a slot in a rigid part on the sleeve, substantially as described.

781,989. Controlling Mechanism for Self-Propelled Vehicles. Augustus A. Ball, Jr., Lynn, Mass., assignor to General Electric Company, a corporation of New York. Filed September 4, 1902. Serial No. 122,066.

Claim—1. In a controlling mechanism, the combination of a lever mounted to turn on either of two axes, a grip thereon mounted to turn with the same and adapted to have an independent movement, and means capable of actuation by the grip when the lever swings about one axis and incapable of actuation when the lever swings on the other axis.

781,990. Frame for Self-Propelled Vehicles. Augustus A. Ball, Jr., Lynn, Mass., assignor

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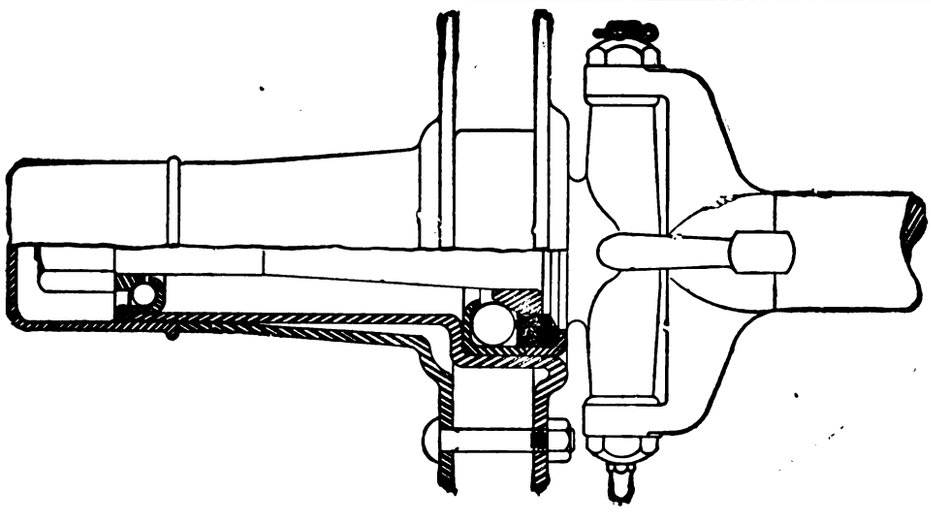
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to General Electric Company, a corporation of New York. Filed October 14, 1903. Serial No. 177,047.

Claim—1. In a vehicle, the combination of a body, a pair of axles, a frame rigidly attached to each of the axles, pivotal connections between each frame and the body, and pivotally supported arches between the axles and the body which permit each of the frames to oscillate with its respective axle.

782,001. Vehicle Wheel. Joseph N. Byers, Urbana, Ohio, assignor of one-half to William R. Ramsey, Urbana, Ohio. Filed March 12, 1903. Serial No. 147,458.

Claim—1. In a vehicle wheel, a rim, the body whereof is composed of a deep trough-like annulus of sheet metal, U-shaped in cross-section and comprising two parallel portions of considerable depth lying in the plane of thrust, and a connecting arched portion, said metal body being of dimensions such as to form the load-sustaining portion of the rim, and a filling member of light material fitting the inner part of the metallic channel and of less height than the depth of said channel, whereby the space between the outer face of the filling member and the projecting flanges of the metallic member forms a seating space of less depth than the channel of the metallic member to receive an elastic tire, substantially as described.

782,085. Rotary Engine. Charles R. Twitchell, Dayton, Heights, Cal., assignor to Brownwinstanley Manufacturing Company, Los Angeles, Cal., a corporation of California. Filed March 28, 1904. Serial No. 200,416.

Claim—1. A rotary explosive engine having a plurality of revolving cylinders, a stationary crank shaft to which the several piston rods are secured, controlling valves carried by said cylinders, and a single element common to all the cylinders movable with the latter for acting on the valves of all the cylinders in two revolutions, but not in sequence.

782,128. Wheel. Charles B. Haney, Olex, Oregon. Filed August 2, 1904. Serial No. 219,198.

Claim—A vehicle wheel, comprising a tubular felly having its inner wall perforated, a tubular thimble inserted through said perforation and bearing at its inner face of the outer wall of the felly, said thimble being provided with an enlarged tubular portion forming a shoulder to bear upon the outer face of the inner wall of the felly, and a spoke having its end seated in the enlarged portion of the thimble and provided with a reduced portion designed to enter the thimble.

782,155. Pneumatic Tire. Carl W. Maxon, West Bay City, Mich. Filed July 11, 1904. Serial No. 216,168.

Claim—In a pneumatic tire, the combination with an outer casing of a pair of air tubes inclosed within said casing; an air valve for each tube, an asbestos cushion surrounding said air tubes and inclosed within said casing, said outer casing being formed of a mesh built up of asbestos covered wires, said mesh being coated with rubber, substantially as and for the purposes set forth.

782,205. Gas Engine. Samuel J. Webb, Minden, La. Filed January 14, 1901. Serial No. 43,225.

Claim—1. The combination of an engine, a carburetter, a pump, a casing having an interior partition provided with a port, a pipe leading from the carburetter to the casing on one side of the partition, a pipe leading from the other side of the partition to the pump, a valve to partially, but not wholly, close, said port and normally held away from the port, a combustion chamber into which the pump delivers the combustion mixture from the carburetter, and a diaphragm subject to the pressure of the gas within the combustion chamber and connected to said valve, substantially as set forth.

782,812. Internal Combustion Engine. Joseph A. Arthur, New York, N. Y., assignor of one-half to Isidore Weill and Sanford Wolfe, New York, N. Y. Filed February 15, 1904. Serial No. 193,646.

Claim—1. In an internal combustion engine, the combination with a working cylinder and means for supplying a combustible charge thereto, and a piston for said cylinder, of igniting means comprising an auxiliary compression cylinder, a piston for said auxiliary cylinder deriving its motion from said first named piston, means for admitting a combustible charge to said auxiliary cylinder, said auxiliary cylinder having a passage for connecting it with said first named cylinder, and an outwardly opening valve having a spring arranged to resist outward movement thereof, said valve normally closing said passage, but arranged to be operated by pres-

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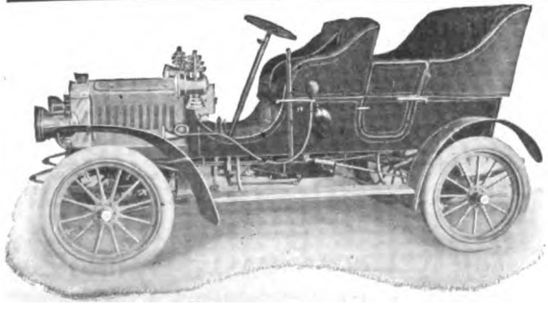
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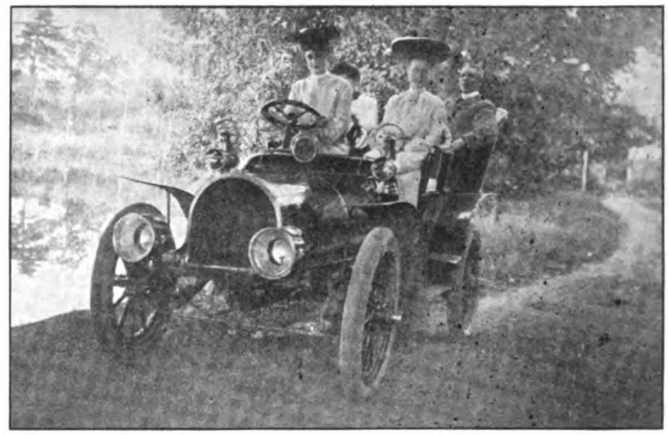
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sure within said auxiliary cylinder when ignition occurs therein.

782,850. Roller Bearing. Frederick P. Hinckley, Jackson, Mich., assignor, by mesne assignments, to George A. McKeel Company, Jackson, Mich, a corporation. Filed January 7, 1904. Renewed January 13, 1905. Serial No. 240,863.

Claim—1. In a roller bearing, spacing rings flexibly connected to each other, and rolls connected to the spacing rings by ball and socket joints.

2. In a ball bearing, spacing rings having yielding ball sockets, radial clamping bolts in the rings, and rolls having ball shaped ends inserted in said sockets.

782,873. Electric Igniting Plug. George H. Oakes, Arlington Heights, Mass. Filed December 8, 1903. Serial No. 184,274.

Claim—1. An electric igniting plug comprising in its construction an insulating sleeve formed of sheet material wound in cylindrical form in layers extending longitudinally thereof, one portion of said sleeve being greater in diameter than the other, said cylindrical portions forming at their juncture a shoulder.

782,886. Gearing. George T. Turner, Philadelphia, Pa. Filed May 6, 1901. Serial No. 58,879.

Claim—1. The combination with the axle and its wheels, one of which is sleeved and the other fast on the axle, of a rotatable support loosely mounted with respect to the sleeve and axle, said support having a rib arranged thereon, a driven member loosely mounted on said support at one side of said rib to coact with the latter, means independent of the support and movable laterally relative thereto for co-operating with the rib, whereby said driven member may be clamped against the rib and released therefrom to render said member fast or loose on said support, means interposed between the rotatable support and said clamping means for maintaining the latter normally in unclamping position, mechanism for driving said member, and differential gearing arranged in said support and connected with the axle and sleeve respectively.

782,898. Automobile Gear. Lee S. Chadwick, Ridley Park, Pa. Filed August 4, 1903. Serial No. 168,138.

Claim—1. The combination with the driving shaft of an automobile and a gear thereon, of a hollow bearing, a gear surrounding said bearing and meshing with the driving shaft gear, said gear having a hollow hub entering the opening in said bearing and an operating shaft having a seat or bearing in said hub.

782,912. Tire Casing. John O. King, Racine, Wis., assignor of one-half to Thomas M. Kearney, William D. Thompson, and Peter J. Myers, Racine, Wis. Filed February 23, 1904. Serial No. 194,804.

Claim—A tire casing, comprising sections of flexible leather stitched together to form a continuous annular tube open at its inner circumference, and with the meeting edges there, and at the junction of each two sections skived to insure uniformity of surface and thickness at all points of union, and with the leather of the sections folded and stitched together on each side of the line of the annular opening, in combination with annular angular strips filling the angular spaces back of the said folded portions, and rows of stitching uniting said strips to said casing.

782,913. Tire Casing. John O. King, Racine, Wis., assignor of one-half to Thomas M. Kearney, William D. Thompson, and Peter J. Myers, Racine, Wis. Filed February 23, 1904. Serial No. 194,805.

Claim—1. A tire casing comprising sections of flexible leather stitched together to form a continuous annular tube circumferentially open for the reception of a pneumatic tube, and the annular edges being provided with series of straight bevel faced opposing annular strips, which interlock as the said edges are forced past each other.

782,914. Vehicle Tire. Woodburn Langmuir, New York, N. Y. Filed April 14, 1902. Renewed July 26, 1904. Serial No. 218,183.

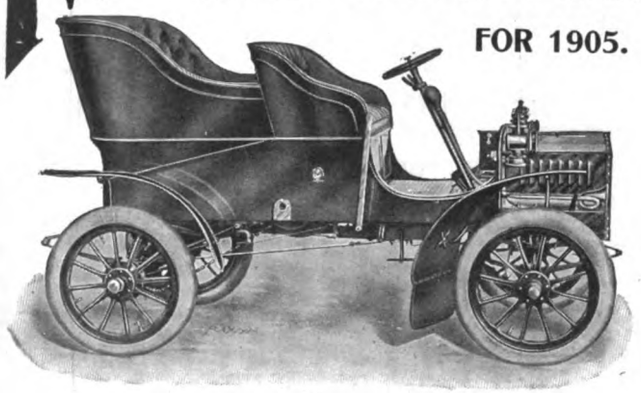
Claim—1. In a vehicle tire, the combination of an elastic portion having a stiffened base, a rim having inwardly formed recesses and outwardly inclined sides, the rim and tire being so proportioned relatively to each other that the tire is adapted to be inserted in the rim by flexing the stiffened base portion past the shoulder of the undercut portion of the rim, substantially as set forth.

782,952. Wheel. Harris T. Dunbar, Buffalo, N. Y. Filed February 23, 1904. Serial No. 194,673.

Claim—1. A wheel comprising a rim, a hub having its periphery constructed in the form of ratchet teeth so as to produce an annular row of tangential seats and an annular row of abrupt shoulders each of which connects the base of one seat with the crest of the adjacent seat, and a plurality of flexible spokes each secured at its inner end to one of said seats and at its outer end to said rim, substantially as set forth.

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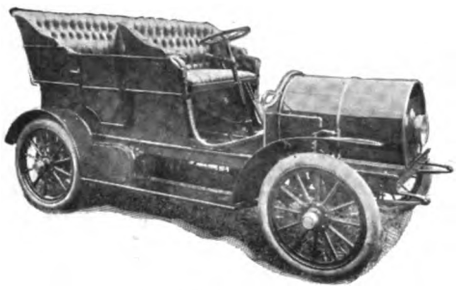
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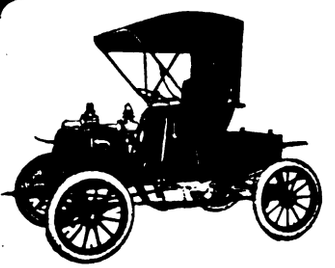
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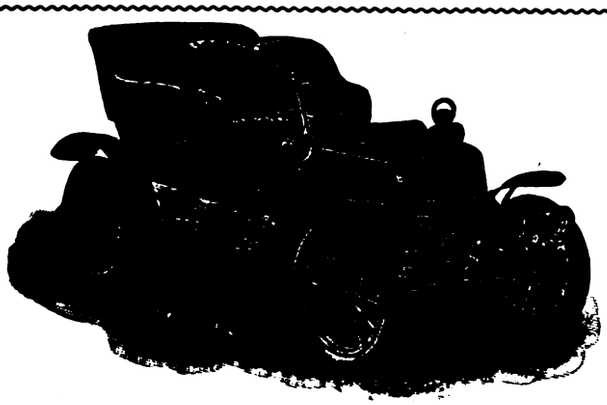
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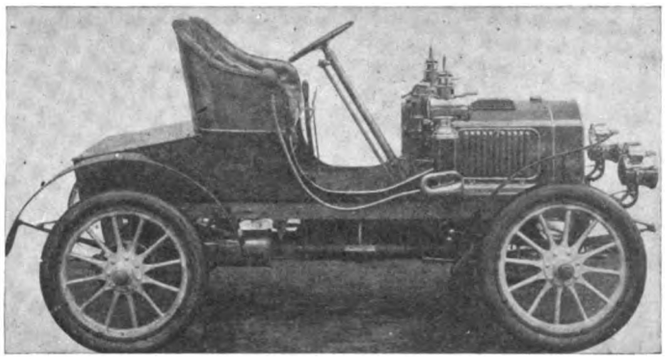
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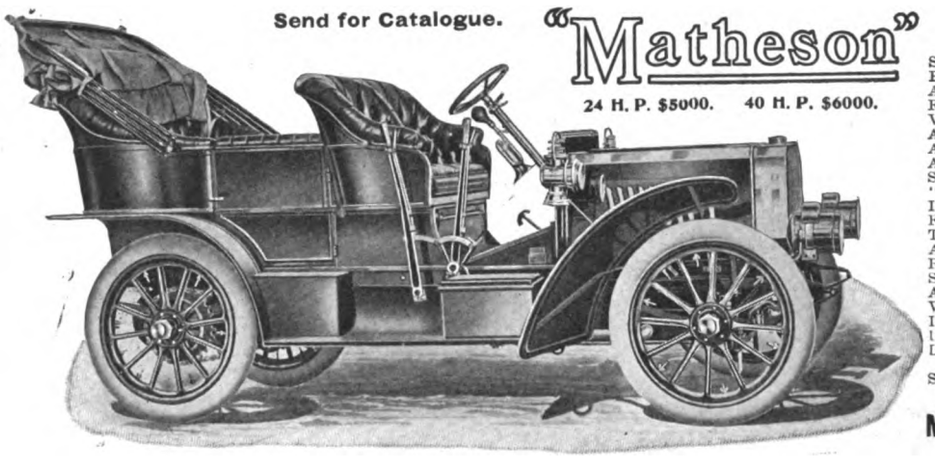
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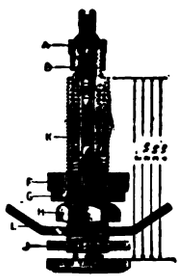
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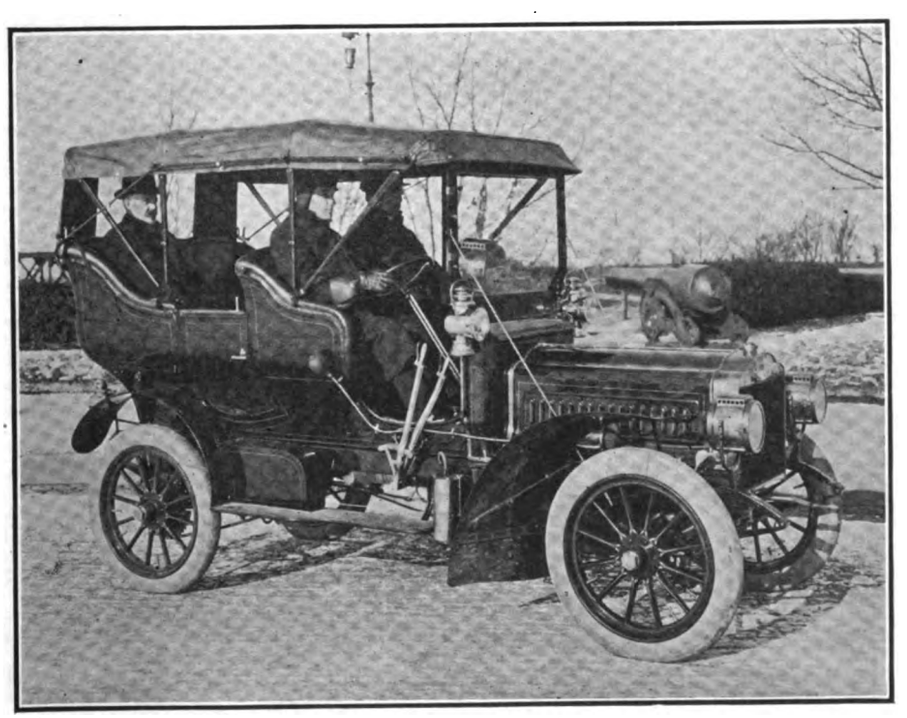
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has a two-fold value to every user of gas power for Automobile, Launch or Stationery Engine.

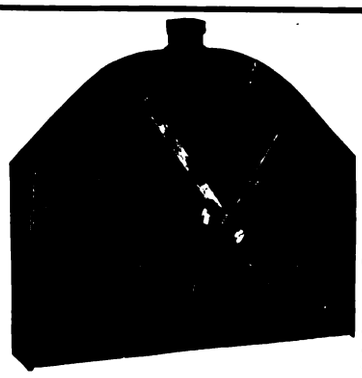
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Write us for anything pertaining to ignition. We make over eighty articles for ignition purposes. THE DAYTON ELECTRICAL MFG. CO., 91 BEAVER BLDG., DAYTON, OHIO

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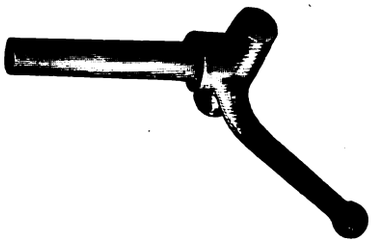
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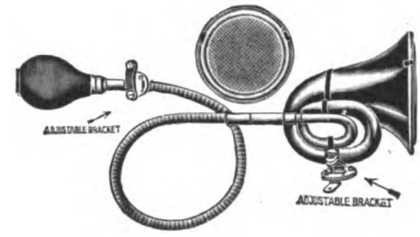
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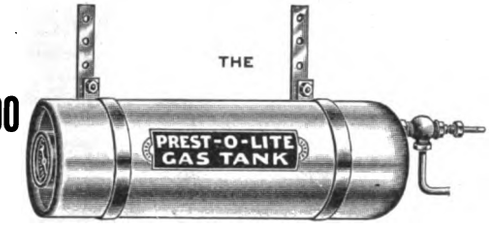
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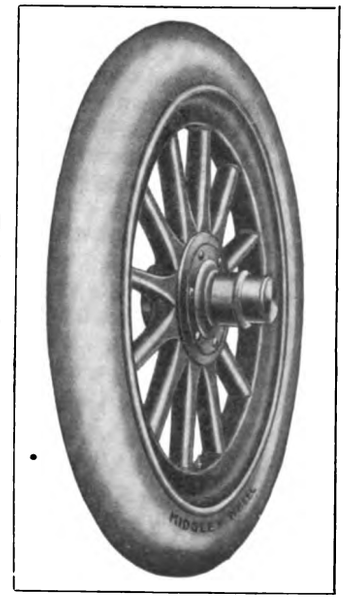
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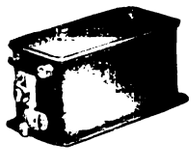
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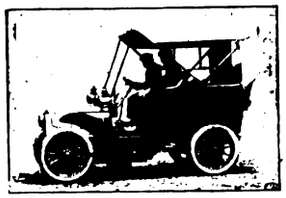
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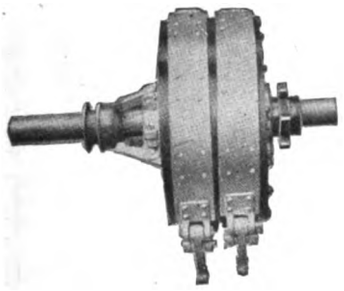
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Two Speeds and Reverse.

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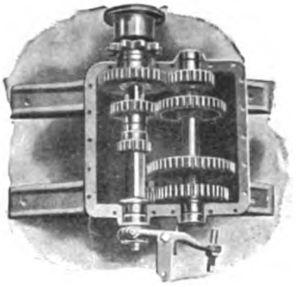
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Other Patents Pending.



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An instrument that will enable you to determine the grade per cent. you are ascending or descending.

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"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 88 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

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Be Sure YOUR CAR is Equipped With Them. AMESBURY, MASS.

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FOR AUTOMOBILE AND MARINE MOTORS
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Sprockets for Old Standard Chains can be re-cut for "Whitney" Standards,



These are "WHITNEY" STANDARDS for Roller Chains.

PITCH.	Diameter of Roll.
1 in.	5/8 in.
1¼ in.	¾ in.
1½ in.	7/8 in.
1¾ in.	1 in.
2 in.	1⅛ in.

The PITCH SIZES and DIAMETFRS advance uniformly in perfect proportion.

They have broken all records for efficiency, and have been adopted for most of the leading American Cars, including:

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PITCH.	Diameter of Roll.
1 in.	9-16 in.
1¼ in.	5/8 in.
1½ in.	¾ in.
1¾ in.	1 in.
2 in	1⅛ in.

These are the OLD or COMPETING Standards.

The PITCH SIZES advance uniformly, but the DIAMETERS are irregular and not in perfect proportion.

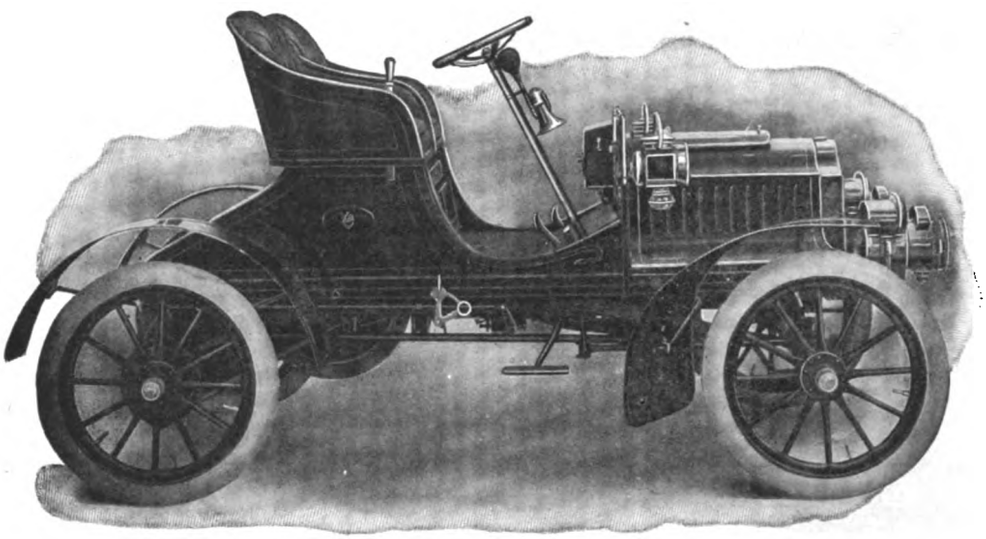
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THE WHITNEY MFG. CO.

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Simple in construction, it seldom gets out of order and its cost from year to year is considerably less than a horse—to say nothing of the greater mileage possible.

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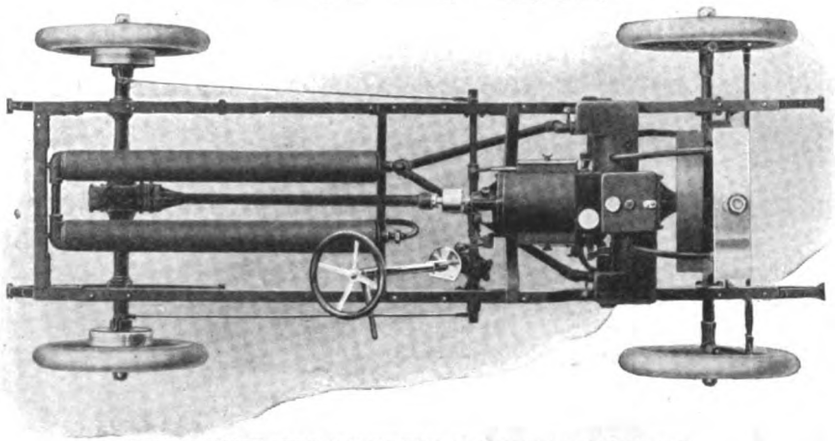
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WE CLAIM SIMPLICITY.

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Our new Catalogue will show you illustrations of the best dressed and best finished line of cars on the market at prices within your reach.

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Model VII. New design 30 H. P. front entrance, tested to a mile in one minute flat. Prompt deliveries, - - - - - - - - - **$3200**

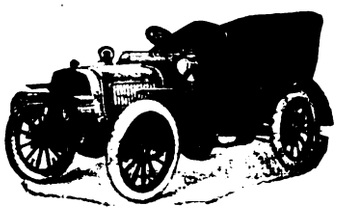
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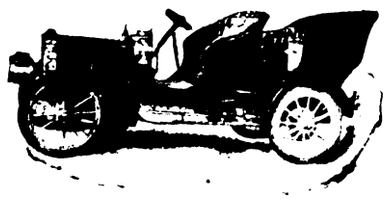


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Power transmitted by double chain direct drive system to an unbroken rear axle. **ABSOLUTE DIRECT DRIVE** on high speed without a single idle gear in mesh.

Write for catalogue giving full specifications.

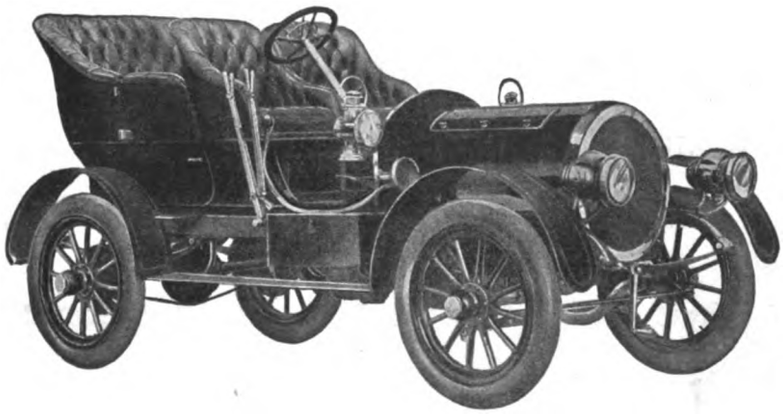


Type VIII, $3500



Pope Motor Car Co., - - Toledo, O.

MEMBERS ASSOCIATION LICENSED AUTOMOBILE MANUFACTURERS.



NATIONAL, MODEL C, PRICE, $2,500.

NATIONAL

Model "C"

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With NATIONALS You Lead—Others Follow.

Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
Five lamps, Generator and horn.
Tires, 34 x 4. Positive oiling.
Luxuriously upholstered in leather.
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Double ball bearing slide gear transmission—direct on high.
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All weight taken off inner axle and differential.
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Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905.

National Motor Vehicle Co.,

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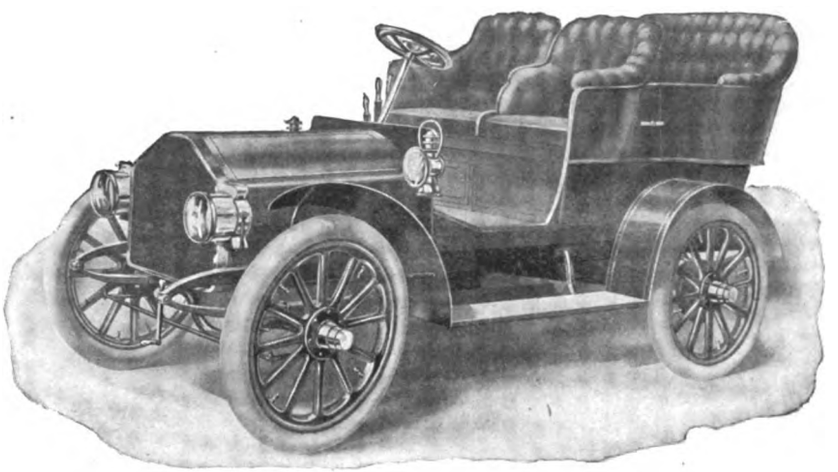
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ORIENT LIGHT TOURING CAR, with Tonneau. 16 H. P. Price $1650.

THE AUTOMATIC AUTO

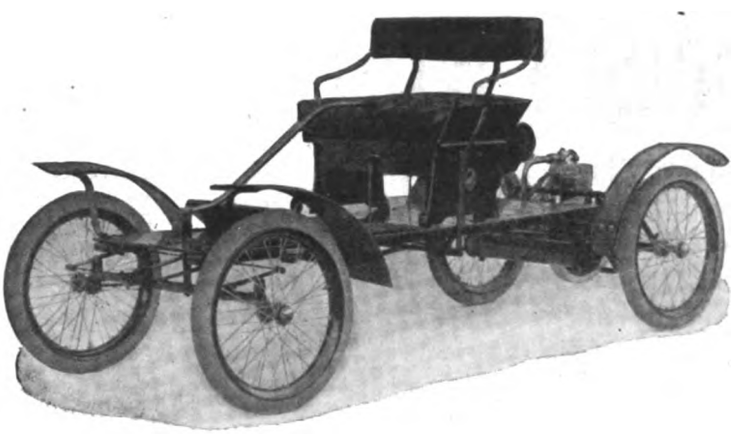
is to some extent a thing of the future—but Orients are very near that stage. They are so simple to operate that the average man can run one in an hour and handle it expertly in a week.

Orients are made for people who want to motor rather than tinker. Their simplicity is a point no better than their absolute reliability.

Orients are air-cooled—hence an Orient Touring Car is 350 pounds lighter than a water-cooled car of the same power. This makes it faster, and saves the tires—cuts down repair bills.

Our great selling plan for Orient dealers will be under way in about three weeks more. When it starts, dealers who have the Orient line will be mighty glad they took it.

Details and catalogue, if you write.



ORIENT BUCKBOARD. 4 H. P. Price $375.

ORIENT TOURING CARS

Model E, Touring Runabout (semi-racing body), 16 H.-P..	$1500
Model E, with detachable Tonneau, 16 H. P.	1650
Model F, Light Touring Car, with Tonneau, 16 H.-P.	1650
Model G, Touring Car, 20 H.-P.	2000
Model de Luxe, Touring Car, 20 H.-P.	2250

ORIENT BUCKBOARD LINE

Buckboard, Model A, 4 H.-P.	$375
Surrey, Model B, 4 H.-P.	450
Runabout, Model C, 4 H.-P.	475
Tonneau, Model D, 4 H.-P.	525

WALTHAM MANUFACTURING COMPANY,

Members of Association of Licensed Automobile Manufacturers.

General Sales Offices: 44 Broad St., NEW YORK. Factory: WALTHAM, MASS.

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Autocar Type VIII $1400

A Wonderful Value.

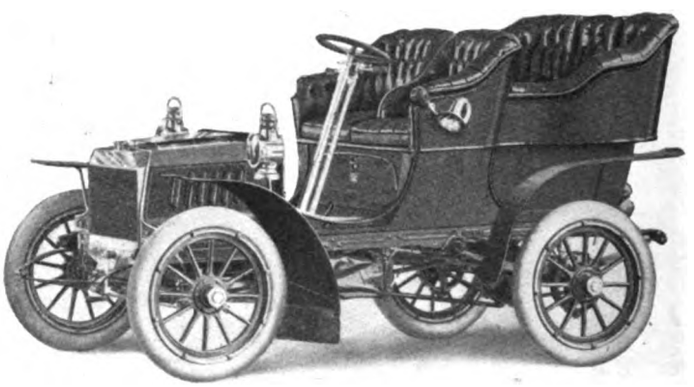
Type VIII Autocar at $1400 represents a wonderful automobile value. This type is the foundation of the Autocar's enviable reputation. It is a car built upon honor throughout. There is nothing experimental about it—nothing uncertain in its construction. During 1904 Type VIII was tested on all sorts of American roads—under all kinds of conditions. It has proved its reliability and efficiency so well as to put Autocar Type VIII in the very front of its class.

Last season Type VIII was sold for $1700 and was considered an unsurpassed value. The price of Type VIII is now $1400 because, having built this model for so long we can now build it more economically. For the man who wants a thoroughly reliable four-passenger car at a moderate price, Type VIII at $1400 is his opportunity.

Catalogue giving full description of Type VIII, Type X Runabout, and Type XI Four Cylinder Car, with dealer's name, sent free upon request.

THE AUTOCAR COMPANY, Ardmore, Pa.

Member of the Association of Licensed Automobile Manufacturers.



Specifications, Type VIII:

Horizontal two-cylinder opposed engine—no noticeable vibration. Twelve actual horse-power. Oiled automatically. Water cooled.

Transmission, sliding gear type. Three speeds forward and a reverse. Ball bearing, shaft drive. No greasy, gritty chain. Front and rear construction has ball bearings throughout. Gasoline tank holds 10 gallons—sufficient on good roads for 200 miles.

Tonneau is removable. Front seat divided. Engine and transmission case are accessible from above without disturbing body.

Two Impulses with Every Revolution

This is the famous Elmore Pathfinder, which has demonstrated beyond a doubt the superiority of the two-cycle engine over the four-cycle engine. The most significant feature of the American Automobile situation to-day is the complete triumph of this impulse-every-revolution idea, or, with two cylinders, two impulses every revolution, as exemplified in the Elmore. That the Elmore does produce a constant torque; that it does utilize every particle of power and put a stop to waste energy; that it will take the steepest hill or roughest road at high speed, and that it has the most reliable self-starting engine in the world—for each and every one of these claims overwhelming proof has been produced.

The whole trend of expert and popular opinion is rapidly being directed toward the two-cycle engine.

You owe it to yourself to see this car, which will astonish you, not only by its fine appearance, but by its excess power and its extraordinary control on the high speed.

Send for our full line of literature, the booklet illustrating the 6,000-mile trip, our catalogue, explanation of our engine, and the opinions of people who have used our cars, all sent free, or, if you wish, we will send a 10x12 photograph of the Pathnder on receipt of 10 cents in stamps.

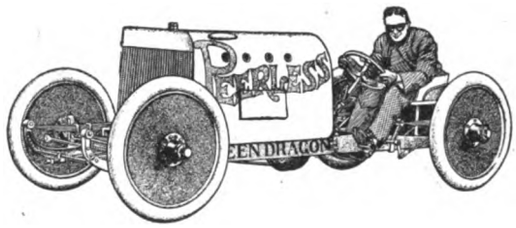
ELMORE MANUFACTURING COMPANY,

1104 Amanda Street, CLYDE, OHIO.

Members of Association of Licensed Automobile Manufacturers.

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Peerless
The Car of Achievement



The Peerless Green Dragon

that holds every world's record from one to fifty miles, owes its wonderful speed to the new type of

PEERLESS MOTOR

that is also found on 1905 Peerless Touring Cars. Hence the greater efficiency of these new Peerless Motors has already been amply proven.

1905 PRICES

24 H.P.	30 H.P.	35 H.P.	60 H.P.
$3,200	$3,750	$4.000	$6,000

Send for Catalogue now ready.

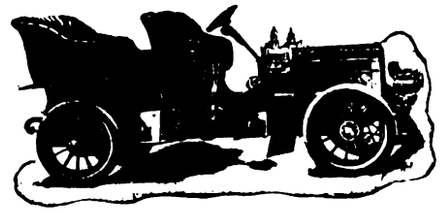
PEERLESS MOTOR CAR CO.
CLEVELAND, OHIO.
Member A. L. A. M.

L. S. & M. B. Co. CLEV'D.

AIR COOLED CORBIN AIR COOLED

For more than fifty years, the product of the firm of CORBIN, New Britain, Conn., has stood for mechanical excellence.

The Corbin Car



is made by this same organization.

All the resources of this great more-than-half-century-old institution are back of it. Is this significant?

TWO MODELS.

16-20 H.P. 24-30 H.P.

Both having four cylinder, vertical motors, AIR COOLED by the CORBIN SYSTEM.

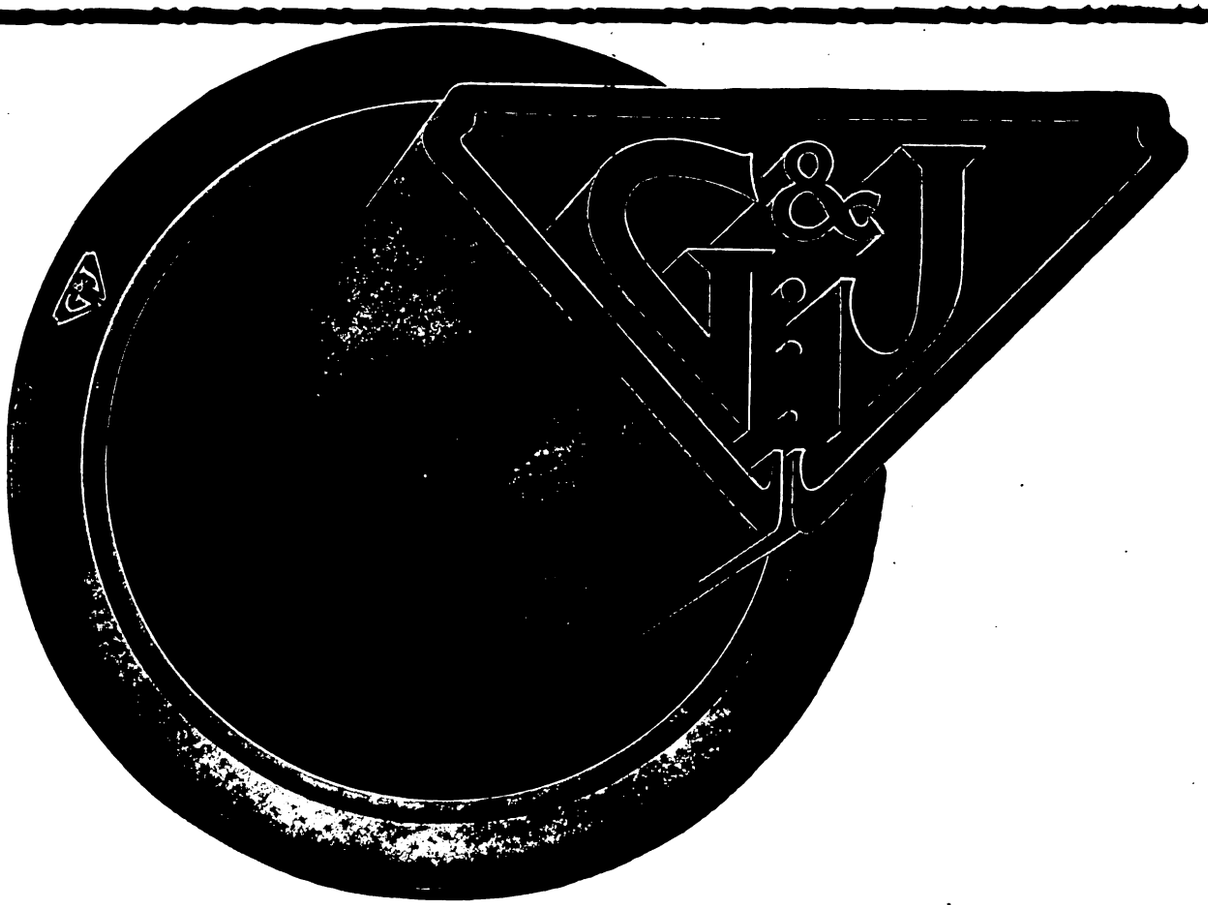
Catalog mailed on application.

CORBIN MOTOR VEHICLE CORPORATION,
Chestnut Street,
NEW BRITAIN, CONN.

SEE OUR EXHIBIT AT BOSTON SHOW.

NEW YORK AGENCY, 4 West 38th St.
BOSTON AGENCY, 163 Columbus Ave.

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No Lugs Required with G&J Thread Fabric Tires

Our special clincher construction, giving uniform leverage at all points, holds the clincher securely in place.
The flap provides a smooth seating for the inner tube, and removes the possibility of pinched tubes.
The thread fabric construction prevents the heating of the tires in action, hence they are not self-destroying. It also makes the tire so pliable that anyone can easily place it on and remove it from the rim

ISN'T THIS THE TIRE YOU WANT?

Most Durable, No Edge Cutting, No Pinched Tubes,
No Troublesome Lugs. Easiest in the World to Handle.

G&J TIRE CO.

Indianapolis
549-625 E. Georgia St.

CHICAGO, 429 Wabash Ave. **DETROIT, 247 Jefferson Ave.**
CLEVELAND, 337 Huron St. **BOSTON.**

Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded

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"STEVENS-DURYEA" TOURING CAR

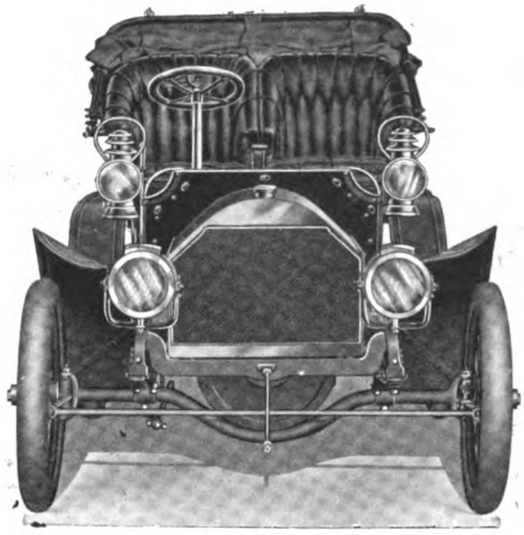
New 20 Horsepower 4 Cylinder

A CAREFUL study of the wants of the public has led us to produce this notable addition to our make.

Cost of maintenance of our latest **Model R** is reduced to the minimum figure.

HIGH POWER
GREAT STRENGTH
LIGHT WEIGHT

are the reasons for this desirable condition.



MODEL R.

PRICE $2500.00.

PROVE our claims by trying one of our **reliable, efficient** and **durable** carriages, and thus ascertain the secret for the **invariable popularity** of the

STEVENS-DURYEA.

Write for name of nearest agency.

AGENTS! Get posted on our attractive automobile proposition.

LEADING FEATURES: Aluminum Body—Side Entrance Tonneau—Pressed Steel Frame. Capacity, 5 Persons. Three Speeds and Reverse—Three Brakes—Bevel Gear Drive—Water Cooling. Weight, 1650 lbs.

J. STEVENS ARMS & TOOL COMPANY,
690 Main Street,
CHICOPEE FALLS, MASS., U. S. A.
Members Association of Licensed Automobile Manufacturers.

THE BAKER ELECTRIC

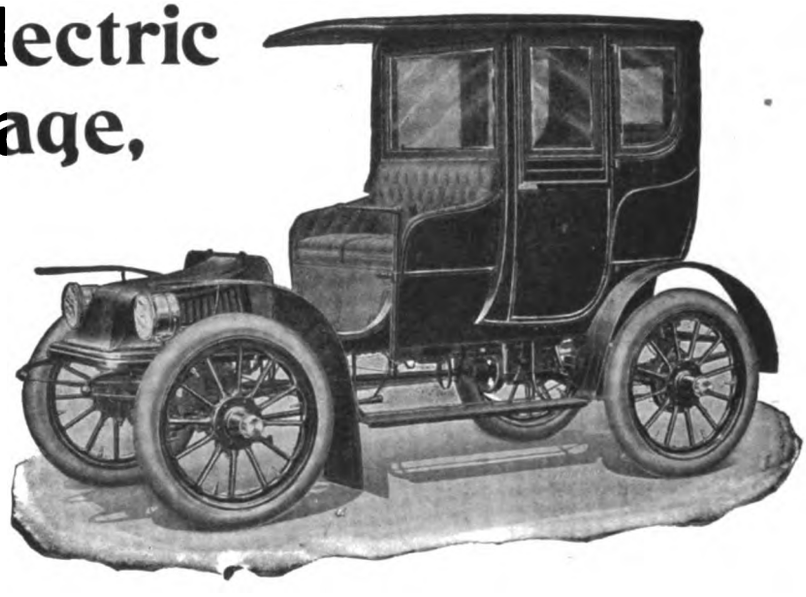
The Baker Electric Depot Carriage,

The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES,

SURREYS, ETC., ETC.



WE ARE READY TO TALK BUSINESS.

THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

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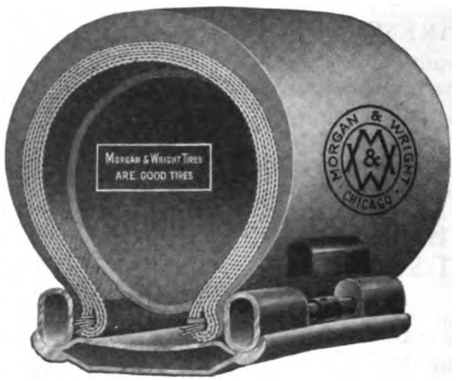
Merely a Matter of Choice

"Every man to his way of thinking."



The Morgan & Wright Clincher

has backed up every good thing we have said about it. It has given the kind of every-day, every-mile service that tire-users everywhere are looking for. Nothing but the best-grade, most durable stock enters into its construction, and it is made by experts who know how to use such material. Its best recommendation is not what we guarantee to do, but what we can prove it has done. Used in connection with our recently-invented tire tools, it is an extremely easy tire to manipulate.

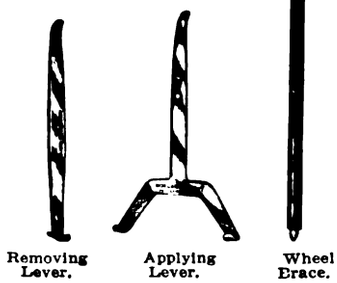


The Perfected Dunlop Detachable

is generally admitted to be the most satisfactory mechanically-fastened tire on the market. The simple, effective method of its construction strongly recommends it to those who prefer this type of tire; and in addition (which is highly important to the prospective tire-buyer) it has every advantage which experience gives to prove that the principle of its construction is correct. It occupies first place among mechanically-fastened tires because it belongs there. Made of A1 stock all the way through.

MORGAN & WRIGHT TIRES ARE GOOD TIRES

Clincher Tire Tools.



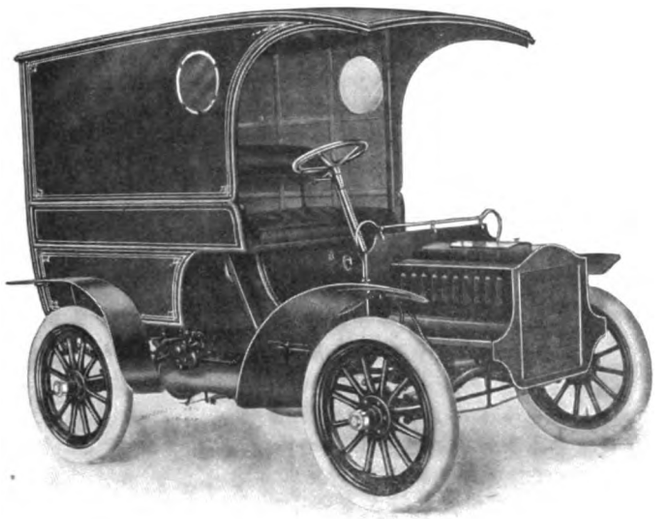
Removing Lever. Applying Lever. Wheel Brace.

SEND FOR COPY 1905 CATALOG AND "THE OTHER FELLOW'S OPINION"

Morgan & Wright, Chicago

NEW YORK PHILADELPHIA DAYTON ST. LOUIS
BOSTON DETROIT ATLANTA
SAN FRANCISCO SYRACUSE

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Model F—Cadillac.

Our Commercial Car

here illustrated is the most practical light car of its class. Five of these cars in constant use the past year at our factory have done the work of fifteen horses, and are still doing it. You can kill a horse but not a Cadillac. As a practical test of what one of these cars will stand, W. V. Snyder & Co., of Newark, N. J., put one of these vehicles in commission July 18; on Dec. 3 they had driven it 6,014 miles, at a total expense for gasoline and oil of only $190.04. The saving over a horse-drawn vehicle those twenty weeks aggregated $567.84, to say nothing of its value as an advertising medium. For light, rapid work, day in and day out, we know of no car at or near the same price that can compare with the Cadillac. **Price $950.**

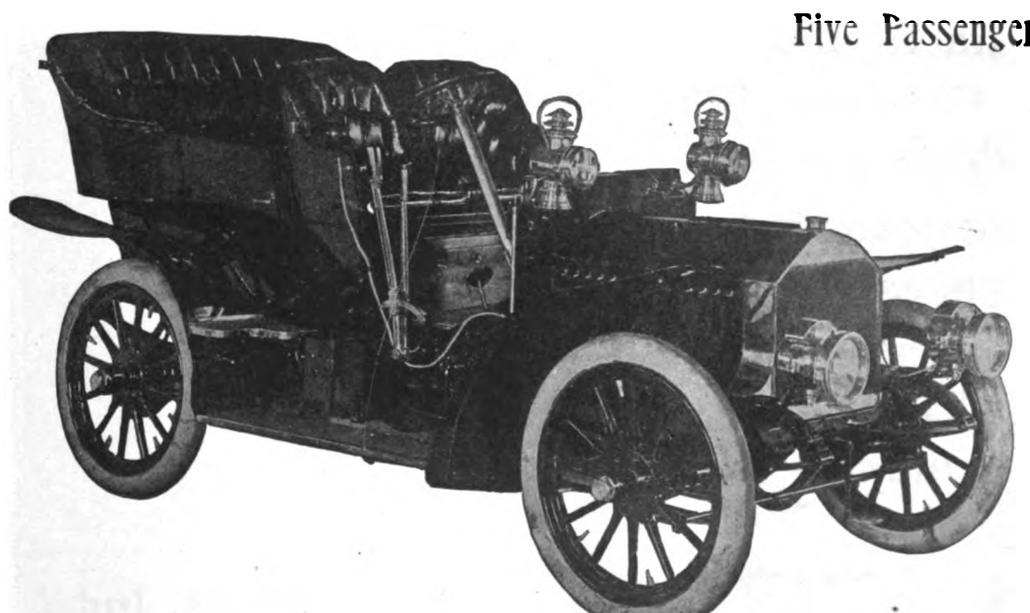
FULL DETAILS, CATALOG, ETC., SENT FREE ON REQUEST.

Cadillac Automobile Company, - DETROIT, MICH.

Member of Association of Licensed Automobile Manufacturers.

"CLEVELAND."

Five Passenger Light Touring Car.



An American car with finish and high-class workmanship, not surpassed by any foreign or domestic car.

18-20 H.P., four cylinder, vertical engine.

Price, $2800,00, complete with standard equipment

Bevel gear drive.

Extreme simplicity in construction and control.

Maintenance reduced to the minimum.

Silent, smooth and reliable in its running qualities.

That indefinable something called STYLE is especially apparent in the "Cleveland."

CLEVELAND MOTOR CAR CO., - - Cleveland, O.

Chicago Agency: THE BENNETT-BIRD CO., 1404-1406 Michigan Ave., Chicago, Ill.

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Suit Against Michelin Tires

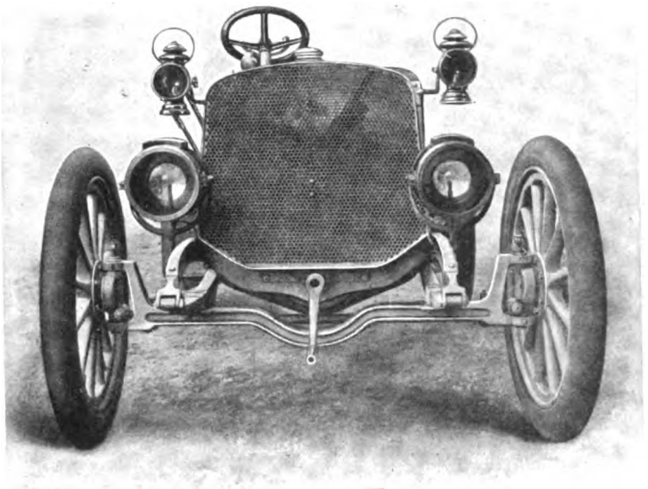
We beg to notify the trade that we have commenced suit against the United States Agency Michelin Tire Company for infringement of our letters patent on Clincher Automobile Tires, and desire to warn the trade against the purchase of such tires.

The following concerns are operating under licenses granted by us:

The Hartford Rubber Works Co.
Morgan & Wright.
India Rubber Co.
B. F. Goodrich Co.
Diamond Rubber Co
Fisk Rubber Co.
Goodyear Tire & Rubber Co.
International Automobile & Vehicle Tire Co.
Continental Caoutchouc Co.

THE G & J TIRE CO., Indianapolis, Ind.

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PUTTING UP A GOOD FRONT

is in keeping with every other point in *Lozier* exclusively high-grade construction. Note the strength and lightness of *The Lozier Motor Car,* and the manner in which every available inch of radiating surface is made to do duty. See how hungry it is to eat up the road. Send for booklet describing our 30-35 H. P. High-Grade Motor Car.

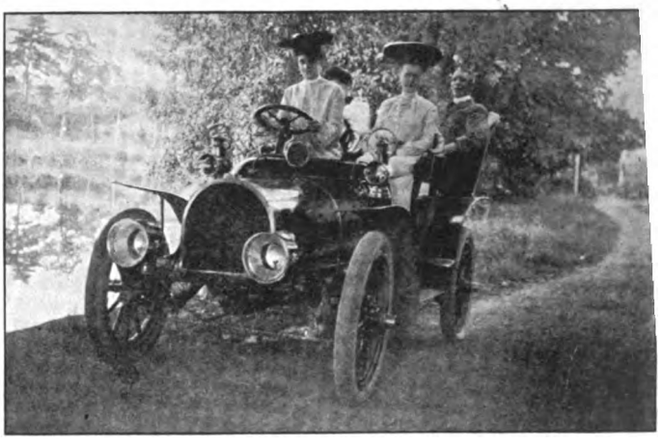
MOTOR BOAT AGENTS WRITE FOR OUR MOTOR BOAT DISCOUNTS AND FOR COPY OF "THE PROPELLER."

LOZIER

THE LOZIER MOTOR COMPANY,

SUITE 9 — 1 BROADWAY, NEW YORK

"HALF OF THIRTY-FIVE.'



A Lady's Watch if geared in proper ratio to the rear axle would pull any Automobile up any hill in **time:** Eternity might better express it! Sounds idiotic, but—think it over. Given the actual horse power, the actual weight of the car and the **actual** grade, it is a simple problem in mechanical mathematics to **prove** how long it will take a car to climb a given hill.

Economical Transmission of the power, perfection in design and construction are the only factors that give one car advantage over another. Otherwise "hill climbing ability," about which agents prate so (un) knowingly is simply a question of gear ratios.

We DUQUESNE Folks don't make fool assertions or fool claims, but we we do claim that

The DUQUESNE Car (16-21 H. P., 4 cylinder, air-cooled) will climb **steeper hills faster** than most $3,500 cars—the **DUQUESNE** price is **"HALF OF THIRTY-FIVE,"** you know.

We pronounce it **"DUKANE,"**
Please yourself, though.

Duquesne Construction Co.,

Manufacturers, **JAMESTOWN, N. Y.**

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GOODRICH Tires

Integral Construction vs. Wrapped Tread Construction.

The so-called wrapped tread construction is not new. It is old, and came into existence only as a makeshift.

There are many objections and no advantages to this construction. It was brought about by the necessities of the first builder and has been copied by others.

The Integral Construction (Goodrich), represents the correct and logical method of building tires, and is new inasmuch as we are the first manufacturers in the world to make a success of it.

Many others have tried and after failure, adopted the wrapped tread construction.

We have just completed, by means of an accurate, practical machine constructed for the purpose, a test of each of the leading tires of the world, and against the best, Goodrich showed 50 per cent. greater mileage.

Specify GOODRICH Tires on your 1905 car and get the latest and best construction.

Send for pamphlet describing history of wrapped tread construction and advantages of Integral Construction.

The Bailey "Won't Slip" Tire. Regular Goodrich Construction, but provided with the Bailey "Won't Slip" tread. Prevents slipping, slewing or skidding.

THE B. F. GOODRICH CO., Akron, Ohio.

TRADE G MARK

TRADE G MARK

Michelin

Cut your tire expenses in half,

use Michelin.

Michelin Tire American Agency,

Incorporated.

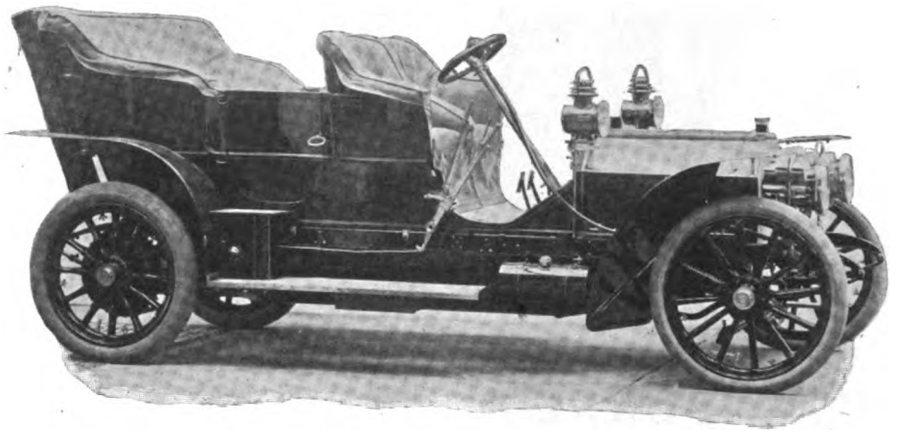
6 West 29th Street **NEW YORK**

Telephone, 4657 Madison,

E. D. WINANS, Gen'l Mgr.

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MERCEDES 1905 MODELS WILL BE EXHIBITED AT BOSTON SHOWS.



MR. ALLEN will be in attendance, stopping at Touraine Hotel.

Orders may be placed with us at **69 Wall Street, New York,** or with **SMITH & MABLEY, the Mercedes Showrooms, 38th Street and Seventh Avenue.**

ALLEN, HALLE & CO., American Representatives of C. L. CHARLEY, Paris.

IT MAKES YOU SWEAR

to take dust from your Neighbor Jones because he drives a Thomas "Flyer" and you don't. You almost hate the pretty curved lines as pictured below, but it starts you thinking, and those thoughts have an important bearing on your next purchase, which is pretty apt to be a Thomas "Flyer."



Thomas 40 Horse Chassis,	.	$2750.
Thomas 40 Horse "Flyer,"	.	3000.
Thomas 50 Horse "Flyer,"	.	3500.
Thomas 50 Horse Limousine,	.	4500.

E. R. THOMAS MOTOR CO.,
1210 Niagara St. BUFFALO, N. Y.
Members Association of Licensed Automobile Manufacturers.

MODEL C **Logan** 1905

THAT CAR OF QUALITY.

16 H. P.	A full grown
Sliding gear	**TOURING CAR**
Automatically oiled.	at the
Speed 3 to 30 miles.	**PRICE**
Side entrance.	of a
Detachable Tonneau.	**RUNABOUT.**

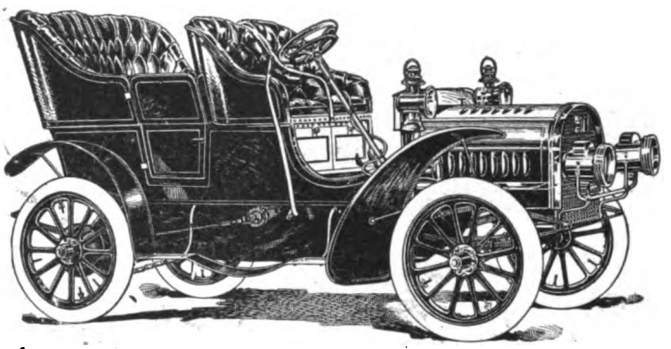
A FEW FOR IMMEDIATE DELIVERY.

Wire Quick.

Logan Construction Co.
Chillicothe, Ohio.

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Rambler



SURREY, TYPE ONE

$1,350

18 H.P. *Immediate Delivery*

This is pre-eminently a family car. Marked provisions for comfort, safety, reliability and ease of operation make it so.

The ignition of the spark is automatic. The brakes are operated by pedals, not by levers. With the steering wheel and throttle attached to it, operable by one hand, the other is always free to manage the clutches by the single lever, and no confusion is possible.

Each working part is readily accessible and so simple that adjustments can be made without the help of a mechanic, and without crawling under the machine. Vibration is almost entirely eliminated by the long wheel base, full elliptic springs, large tires, the rigid bracing of the engine and the balancing of all reciprocating parts.

The big luxuriously upholstered seats, olive green and brass trim, and the graceful lines of the body, make it one of the three most beautiful cars on the market.

When delivered, it is equipped with a brass side, tail and two gas head lights with separate generator, brass horn, drop-forged wrenches, oilers, pump and repair kit; in fact, ready for use with the filling of the gasoline and water tanks.

If the price were not so conspicuously featured, it would easily be considered a $2500 to $3500 car.

Other Models $750, $850, $2,000, $3,000.

BRANCHES: BOSTON, 145 Columbus Ave. PHILADELPHIA, 242 North Broad St. CHICAGO, 302-304 Wabash Ave.
NEW YORK AGENCY: 134 West Thirty-eighth St.

Main Office and Factory, Kenosha, Wisconsin.

THOMAS B. JEFFERY & COMPANY

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, March 9, 1905. No. 24

TO CONTROL THE IGNITION

Patent Unearthed and Syndicate Forming to Exploit it—Affects Multiple Engines Only.

While the Selden patent occupies the centre of the stage, there's a "new Richmond" almost ready to make its appearance and to stand in the limelight of basic patents. It is claimed to control the ignition of all motor vehicles having more than one cylinder, and as ignition is very naturally vitally necessary to cars built within and without the scope of the Selden grant, practically the entire industry is involved.

The patent in question is No. 433,551, and covers a gas engine. The application was filed December 12, 1887, and the patent was issued August 5, 1890, to Elmer A. Sperry, of Chicago, who later was of the Sperry Battery Co., Cleveland, Ohio.

It is known that it has been passed on and pronounced sound by several patent experts of note, and that for some time its exploitation has been in the hands of A. L. Garford, president of the Federal Mfg. Co., Elyria, Ohio. Mr. Garford has been seeking to form a $50,000 pool or syndicate of five men to purchase the Sperry patent and to bring it to bear on the industry. He is said to have interested several prominent manufacturers. As the patent has less than three years of life left in it, if the pool is formed, it would appear that the collection of back royalties will be a considerable part of its mission.

The patent, as stated, covers a complete gas engine, the several features of which are, of course, described in detail. That portion of it that refers to the ignition system is as follows:

In a gas engine, two ignitors actuated at the expiration of the stroke thereof from a common source oppositely connected to each other and consisting of moving levers internal to the cylinder.

In a gas engine having more than one combustion cylinder, and in combination with the ignition contact interior to each combustion cylinder, a common source of electricity, and multiple arc circuit connections from said source to said ignitors.

In a gas engine, the combination, with two ignitors, of the generator, spark or self-induction coil, and electrical circuits and moving contact levers interior to the combustion chamber, and consisting of moving levers internal to the cylinder, substantially as and for the purpose specified.

In a gas engine, and in combination with a generator or source of electrical energy, two electrical ignitors interior to two combustion cylinders coupled therewith in multiple arc circuit.

In a gas engine, a generator of electricity and multiple arc circuits, in combination with two ignition contacts interior to two combustion chambers, which make and break the electrical circuit alternately.

In a gas engine, the combination of electrical generator circuits, two ignition contacts interiorly disposed to the cylinder and actuating devices whereby the circuit of the greater is alternately completed through first one and then the other of the contacts.

In a gas engine, an ignitor actuating part sustaining a sliding frictional contanct with the moving parts.

In an ignitor for a gas engine, a vibrating lever, in combination with a rod which sustains a sliding or rubbing frictional engagement with the moving portion of said engine and contact part or parts of the rod bearing such a relation to the lever as to provide a small open space or "lost motion" between the lever and the rod.

Ford Gets More Time.

By order of the court, the Ford Motor Co. has been granted an additional three months in which to complete the taking of testimony in the suit involving the validity of the Selden patent—that is the suit in which the Electric Vehicle Co., acting for the Association of Licensed Automobile Manufacturers, is the complainant. This extension will give the Ford side until May 5 to perfect its case.

The court order further instructs that the testimony submitted shall be limited to that of Professor Rolla C. Carpenter, of Cornell University, and Jesse M. Smith, the Detroit expert witness for the Ford Motor Co.

It is believed that these limitations will result in judgment being rendered before the close of the year.

CUTLER CHOSEN PRESIDENT

Springfield Man Now Heads the N. A. A. M.—Profits of the Big Shows Disclosed.

E. H. Cutler, of the Knox Automobile Co., of Springfield, Mass., is the new president of the National Association of Automobile Manufacturers. The other officers are: First vice-president, G. W. Bennett, of Thomas B. Jeffery & Co., Kenosha, Wis.; second vice-president, A. L. Pope, of the Pope Mfg. Co., Hartford, Conn.; third vice-president, S. D. Waldon, of the Packard Motor Car Co., Detroit, Mich.; treasurer, W. R. Innis, of the Studebaker Automobile Co., New York, and secretary, Percy Owen, of the Winton Motor Carriage Co., New York. The election took place at the regular monthly meeting of the executive committee at the offices of the association on Wednesday afternoon.

Strong efforts were made to secure the continuance in office of Windsor T. White, the former president, but he persistently declined to accept the honor. It will be recalled that at the January meeting, which was the regular time for the election, Mr. White was kept in office by a timely motion to defer the election and to adjourn. Upon his second refusal, according to the precedent of the association, Mr. Cutler, his vice-official, was elevated to the office.

Next to the election, the most important item of business was the presentation of the reports of the New York and Chicago shows. They threw a strong light on the exaggerated claims set up by too patriotic Chicagoans.

The net profit of the New York show was $59,933.93, of which the N. A. A. M. and A. C. A. get equal shares of 30 per cent., or $17,980.18, and the Garden Company $23,973.57, or 40 per cent. This represents a gain of something above $7,000 over last year's exhibition.

The report showed that although the profits of the Chicago show were nearly 50 per cent. less than New York, it proved a fat plum for Manager Miles. The net proceeds were $30,504.54, of which the first $6,000 go

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to S. A. Miles, as manager. The remaining $24,504.54 is divided into one-third, which goes to S. A. Miles, and two-thirds, or $8,168.18, to the national asociation. This is an increase of something like $5,000 over last year's total. The Chicago Automobile Club asked for a crumb of $1,000 or so, but as it had done nothing, the crumb was not given.

The association's income from the two shows was therefore $26,148.36, or 20 per cent. more than last year. The treasurer's report shows the total of funds in hand to be $41,000.

Other business consisted of the appointment of a committee composing Messrs. Clifton, Bennett and Innis, to consider and, if approved, recommend a plan of pro rata rebate to the members of a portion of the amount now in the treasury.

The subject of anti-automobile legislation was discussed at some length, but no decisive action was taken. The committee on good roads reported progress in the matter of the Brownlow bill, which is to come before the next session of Congress. Mr. Chapin, who tendered the report, said that up to the present time the committee's efforts had been largely concentrated on the owners of cars and on representatives of the daily press.

Show plans were discussed at length, but no other action was taken than to reject finally the proposition to hold a joint parts and commercial vehicle show in the early fall. Other action was postponed, pending the installation of the new board of officers.

Two new members were elected—the Wayne Automobile Co., of Detroit, Mich., and the Buick Motor Co., of Jackson, Mich.

January Exports More than Doubled.

Export statistics for the month of January last as compared with the corresponding period of the previous twelve months show that the year has started auspiciously. The total for January, 1904, was but $89,535, as against $196,144 for the present year, or something over 100 per cent. increase. For the period of seven months ending with January in three years past the totals show a consistent growth that augurs well for the future of the industry in this country. They are $602,999, $1,014,124 and $1,122,638.

Pontiac Hides its Secret.

Pontiac, Michigan, is possessed of a deep, dark secret. The Board of Trade claims to have received a letter from a Detroit automobile manufacturing concern that wants to locate in Pontiac, because of better freight facilities. The firm claim a business standing of three years, but the Board of Trade refuses to disclose its name until the deal is clinched.

Black Diamond Changes its Stock.

At a meeting of the stockholders of the Black Diamond Automobile Co., at Utica, N. Y., last week, it was voted to retire $125,000 of the common stock of the company and issue in its place $125,000 of preferred stock.

The Week's Incorporations.

Chicago, Ill.—Adrian Automobile Co., under Illinois laws, with $5,000 capital. Corporators—Thomas Singleton, W. T. Lambert and W. S. Black.

Chicago, Ill.—Autocar Equipment Co. changes name to Continental Motor Mfg. Co., and increases capital stock from $25,000 to $100,000.

Kittery, Maine.—Lowell Automobile Corporation, under Maine laws, with $10,000 capital. Corporators—O. S. Paul, Jesse E. Forsythe and Ernest L. Chaney.

Trenton, N. J.—Motor Car Specialty Co., under New Jersey laws, with $70,000 capital; to manufacture specialties. Corporators: Edw. S. Lea, John O. Hart and George E. Dunn.

Cleveland, Ohio.—Central Automobile Co., under Ohio laws, with $12,000 capital. Corporators—T. Long, A. B. Keil, W. S. Furze, B. J. Venning, A. H. Smith and W. J. Knight.

Cleveland, Ohio—Automobile Engineering Co., under Ohio laws, with $50,000 capital. Corporators: R. J. Venning, Fred La Pierre, George H. Carin, F. K. Murks and Joseph Ledwinks.

Chicago, Ill.—Central Automobile Co., under Illinois laws, with $2,500 capital, to manufacture and deal in automobiles. Corporators: John Vennema, H. I. Westphal and C. Stephens.

Newburg, N. Y.—Lackawanna Mfg Co., under New York laws, with $20,000 capital; to manufacture motors and engines. Corporators: T. Caldwell, W. H. Caldwell and A. W. Mapes.

Chicago, Ill.—Superior Automobile Co., under Illinois laws, with $2,500 capital, to manufacture automobiles. Corporators—Richard H. Mather, Willis H. Hutson and Benson Wright.

Columbus, Ohio.—Automobile Engineering Co., The, under Ohio laws, with $50,000 capital. Corporators—R. J. Venning, Breo La Pierre, G. H. Cann, F. R. Marks and Joseph Ledwinka.

Chicago, Ill.—Central Automobile Co., under Illinois laws, with $2,500 capital, to manufacture automobiles. Corporators—Alfred D. Plamondon, James E. Higgins and Benjamin F. Richolson.

Taunton, Mass.—Carlow Automobile Co., under Massachusetts laws, with $9,000 capital, to deal in automobiles. Officers and corporators — President, Fred. A. Shaw; treasurer, Henry Carlow.

Cadiz, Ohio.—Cadiz Electrical Co., under Ohio laws, with $12,000, to deal in electrical apparatus. Corporators—G. B. MacGowan, G. D. McFadden, E. W. Long, J. V. Connor, S. K. McLaughlin and S. R. Cunningham.

Summit, N. J.—Summit Motor Car Co., under New Jersey laws, with $5,000 capital; to manufacture, repair, buy and sell automobiles. Corporators: Cyril G. Smith, Joseph O. Chrystal and Martha A. Chrystal.

Jackson, Mich.—Articles amending the incorporation of the Jackson Engine and Motor Co., by increasing the capital stock from $30,000 to $60,000, and changing its name to Field-Brundage Co., have been filed.

Detroit, Mich.—Detroit Steam Engine Co., under Michigan laws, with $50,000 capital; to make automobiles. Corporators: John D. MacLachlin, Ovid B. Law, William E. Higginbotham and William G. Malcolmson.

Bullock Embarrassment Brings Changes.

While the Bullock ignitor has not exactly "doused its glim," its makers, the Bullock-Beresford Co., Cleveland, Ohio, have developed a bad short circuit. They are in the hands of a receiver, G. A. Paulds, of that city. Their affairs are said to be in very bad shape.

Out of the trouble there has grown, however, two new concerns—the Bullock-Beresford Mfg. Co., incorporated under Delaware laws, and the International Ignition Corporation, in both of which A. R. Bullock figures, in the former as president—although it is added he is taking no active interest—and in the latter as general manager.

The Ignition Corporation claims to be "sole owners and manufacturers for the continent of the Bullock ignitor." Its officers are: J. B. Shields, president; F. J. Roehl, vice-president; A. C. Wertheim, treasurer; M. E. Meisel, secretary, and A. R. Bullock, general manager. In addition to Mr. Bullock, inactive president, the officials of the new Bullock-Beresford Mfg. Co. are Thomas Pettifer, vice-president; G. E. Sherman, treasurer, and W. E. Beresford, secretary.

Death of F. A. La Roche.

After a six weeks' battle with cancer of the stomach, Frederick A. La Roche, president of the American Darracq Automobile Co., succumbed to the disease Saturday at the Presbyterian Hospital, New York City, at the age of forty-three years. Although his death was not unexpected, it came as a shock to his many friends.

Mr. La Roche was a genial man, with a characteristic earnestness of purpose, and whatever he undertook was done with sincerity.

As a racing enthusiast Mr. La Roche was especially prominent. His last racing was done at the Florida meet last year, but his most notable feat was the non-stop run to St. Louis and return last summer.

Besides being president of the American Darracq Co., Mr. La Roche was largely identified with electrical interests and was president of the F. A. La Roche Electric Appliance for Lighting and Power Co.

Mr. La Roche was one of the founders of the Automobile Club of America.

Show in 'Frisco Next Month.

San Francisco's annual Sportsmen's Show this year will be in large part an automobile show, with practically all of the better known cars in evidence. It occurs April 1-14.

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BUFFALO'S SHOW BEGINS WELL

Everything was in "Apple Pie Order" and Large Crowds Filled the Hall.

Buffalo, March 7.—Buffalo has cause to be proud of the successful commencement of the third annual show given under the auspices of the Automobile Club of Buffalo, and the Trade Association, which was inaugurated last night.

The formal opening took place at 8 o'clock, and, strange to say, every exhibit was in its place and completely in order. There were none of those vacancies, none of that annoyance which has characterized several of the other shows this year. The attendance was good, almost to excess, for Convention Hall was uncomfortably crowded throughout the evening. The exhibits are tastefully arranged, and the hall prettily decorated with flags and bunting, which, as one of the local dailies somewhat floridly expresses it, "hung or was draped from everywhere, while toward every viewpoint glowed the yellow gleam of the incandescent light from the variegated signs of the times, which, however lettered, spelled 'This is the Day of the Automobile!'"

As to business, the first night was, as usual, given over almost entirely to visiting and entertaining. But on Tuesday and Wednesday matters assumed a more businesslike form, and numerous orders as well as many more hopeful prospects have been reported. The "sold" signs have begun to appear here and there, and everyone wears a hopeful optimistic expression.

The souvenir element is quite as much in evidence as at the other shows, nearly all of the fifty or more exhibitors having something besides a catalogue and good counsel to give away. On the opening night several of the local dealers scored by giving away carnations and sachet bags, while the usual quota of stick pins and whistles was not lacking.

On Thursday evening the great event of the week will occur in the banquet to be given by the Automobile Club to the New York State Automobile Association. All the well-known motorists who are here in attendance on the show will be present, and a very joyous occasion is anticipated.

A list of the exhibitors showing at the hall is as follows:

Duquesne Motor Car Co., Jamestown, N. Y.—Duquesne cars.

Knox Automobile Co., Springfield, Mass.—Knox cars.

Denniston, E. E., Buffalo, N. Y.—Tops.

Poppenberg Automobile Co., Buffalo, N. Y.—Agents for Rambler, Marion, Queen and National cars.

National Battery Co., Buffalo, N. Y.—Storage batteries.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk mechanically fastened tires.

O. K. Machine Works, Buffalo, N. Y.—Parts.

Hartford Rubber Works Co., Hartford, Conn.—Perfected Dunlop detachable and Hartford and Turner tires.

Badger Brass Mfg. Co., Kenosha, Wis.—Solar acetylene gas lamps.

Goodyear Tire & Rubber Co., The, Akron, Ohio.—Goodyear tires.

P. W. Eigner, Buffalo, N. Y.—Agent for Pope-Waverley cars.

Thomas Motor Co., E. R., Buffalo, N. Y.—Thomas cars.

Buffalo Electric Carriage Co., Buffalo, N. Y.—Buffalo electrics.

Roe Automobile Co., West Buffalo, N. Y.—Accessories.

Pierce Co., The George N., Buffalo, N. Y.—Pierce Great Arrow and Pierce Stanhope.

Jaynes Automobile Co., The W. C., Buffalo, N. Y.—Agent for Olds, Winton, Pope-Toledo, Pope-Tribune, Pope-Hartford and Buick cars.

Meadows & Hafer, Buffalo, N. Y.—Agents for Reo and St. Louis cars.

Buffalo Automobile Exchange, Buffalo, N. Y.—Agent for Haynes and Northern cars.

Brunn Carriage Co., Buffalo, N. Y.—Agent for Stevens cars.

Cramer, J. A., Buffalo, N. Y.—Agent for Ford, Mitchell, Matheson and Premier cars.

Centaur Motor Co., Buffalo, N. Y.—Agents for Peerless, Packard, Yale, Cadillac and Columbia cars.

Wayne Automobile Co., Detroit, Mich.—Wayne cars.

Buffalo Gasolene Motor Co., Buffalo, N. Y.—Engines.

Diamond Rubber Co., Akron, Ohio.—Diamond detachable clincher tires.

Ephraim Bros., Buffalo, N. Y.—Continental tires and accessories.

Gray & Davis, Amesbury, Mass.—Headlight, side and tail lamps, oil and acetylene.

Goodrich Co., B. F., Akron, Ohio.—Goodrich detachable clincher tires.

Jackson Automobile Co., Jackson, Mich.—Jackson cars.

Rose Mfg. Co., Philadelphia, Pa.—Lamps.

Standard Oil Co., Buffalo, N. Y.—Gasolene.

Twyford Motor Car Co., Brookville, Pa.—Twyford cars.

Strauss & Sons, Joseph, Buffalo, N. Y.—Accessories.

Ballou, F. A., Buffalo, N. Y.—Motor boats.

Hartford Suspension Co., New York City.—Shock absorber.

Automobile Supply & Repair Co., Buffalo, N. Y.—Agents for Maxwell cars.

Hill Mfg. Co., Buffalo, N. Y.—Tops.

Noonan, A. S., Rome, N. Y.—Repair tools.

Star Automobile Co., Buffalo, N. Y.

Prescott Automobile Co., New York City.—Prescott steam cars.

White Sewing Machine Co., Cleveland, Ohio.—White steam cars.

Knoll & Turgeon, Buffalo, N. Y.

Cornwell, Millard, Buffalo, N. Y.

Ralph, Roger C., Buffalo, N. Y.

Fire in the carriage repository of Charles P. Woolston, at Riverton, N. J., Tuesday destroyed two automobiles; they were valued at $25,000.

A. C. A. SHOW IS CONFIRMED

Former Committeeman Dispels All Doubts—New York Armory to be Secured.

It is now possible to state definitely that the Automobile Club of America will hold a show in New York next year, and that it will be held in one of the National Guard armories.

A. L. Shattuck, who was formely a member of the club's show committee, is the ample authority for the statement.

"I can tell you no more," said Mr. Shattuck, when pressed for further information, "as I am no longer a member of the committee. You will have to see General George Moore Smith, the chairman, for further particulars."

General Smith is, unfortunately, confined to his home by illness.

Corbin to Build Big Garage.

The Corbin Motor Vehicle Corporation, of New Britain, Conn., have broken ground for what will be one of the largest garages in New England; indeed, it is said that it will be the largest fireproof structure of its kind in the country. The dimensions are 47x122 feet, and it is expected that it will be completed and ready for business by June 1. It is situated on the direct line of travel between New York and Boston, and provide storage facilities for fully 200 cars. In addition, there will be a complete repair shop in the building, where the most difficult work will be performed.

Trying a Departure in Carburetters.

Carburetters using "the double float feed principle" are being experimented with by the Eclipse Machine Co., Elmira, N. Y. The first one is being put to the test, and its behavior to date is said to have been such as to practically assure the marketing of the device. It is said to be most ingenious, but beyond admitting that it incorporates a double float, the Eclipse people will say nothing concerning it.

Lions and Lambs in Same Fold.

A rather unusual proceeding has been instituted by two Harrisburg (Penn.) automobile firms, the Central Automobile Co., Inc., and the Harrisburg Automobile Co. The former handles the licensed cars and the latter independent ones, but like the lion and the lamb the two firms have jointly leased the Bailey building, on Market-st., and will sell their respective wares in the same store.

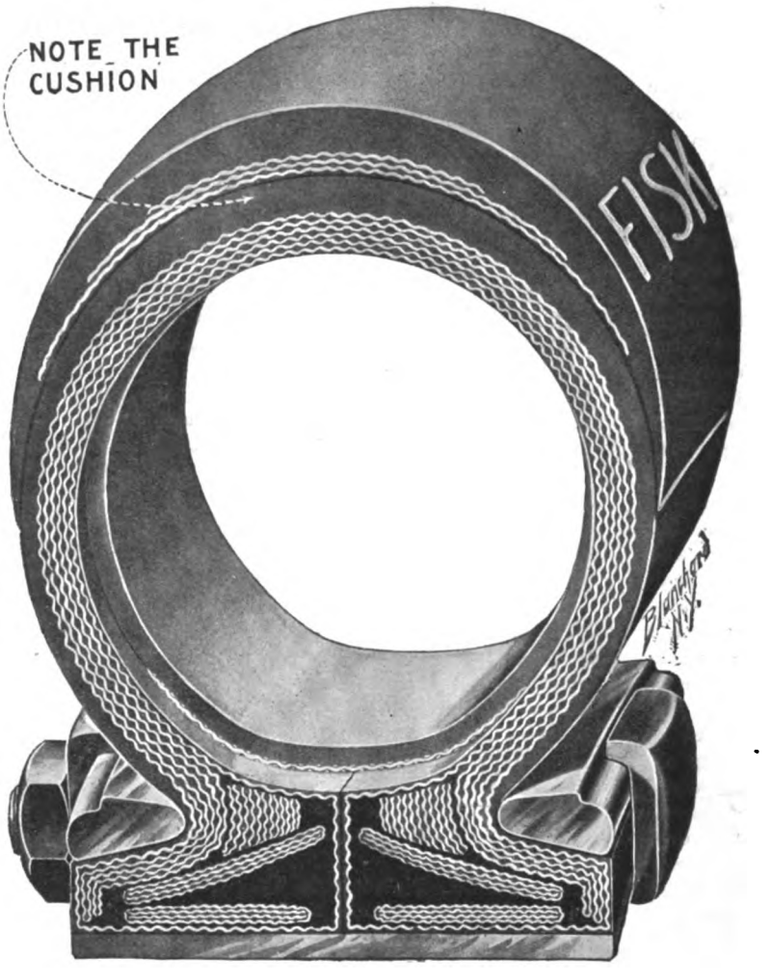
New Garage for Scrantor.

H. R. Jadwin, manager of the Scranton (Pa.) Garage and Motor Co., has given out the contract for the erection of a $25,000 garage in that city. The building will be of brick construction, 68x90 feet, two stories high and fireproof.

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PHILADELPHIA, 828 Arch St.
ATLANTA, 103 N. Pryor St.
SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
DETROIT, 254 Jefferson Ave.
MONTREAL, CANADA

ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
MINNEAPOLIS, 704 Hennepin Ave.
DENVER, 1534 Glenarm St.
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When Haste Makes Waste.

Although it is not generally recognized, this is the time of the year when reputations are made or unmade.

Many factories are long of orders and short of cars. Buyers are clamorous. Their call for the goods is long, loud and persistent. The factory is strained to the uttermost to meet the call, and as so often happens, it is in many instances a case of "the more haste the less speed." The cars are rushed through only to return or at any rate only to bring wails of distress.

The temptation or disposition to "take chances" and to assume that despite hurried assembling all is right and to ship cars without proper inspection and test is great. It is the cause of all the trouble. It is the thing that mars the reputation. Bad news speeds quickly and a half score of balky or otherwise troublesome cars early in the season will cause more gossip and work more injury than a hundred of them later in the year. Whatever may be the case with the actual production of parts, the assembling and inspection and testing of a car is something that simply cannot be hurried. It takes a certain time to perform each of these all important tasks and for the best results the time devoted to them cannot or at any rate should not be less in February or March than in July or August.

Happy the factory manager or superintendent who not only realizes the fact, but who has backbone enough to refuse to be hurried in these respects. His principals and their agents may fret and fume, and even damn him, but his inflexibility means the difference between profit and loss, between reputation and ruin.

The hurriedly assembled, improperly tested car is one of the holes through which not merely the manufacturer's, but the agent's profits have leaked. It means either that the agent must do the manufacturer's work or that the latter must undo what he has done and then do it all over again.

Routing of the Theorist.

It has well been said that the automobile was not designed by an engineer. It might be added that in a great number of instances it was not constructed by an engineer, and in some is not so constructed to-day.

In few other fields of endeavor has theory gone down so often and so conclusively before practice, but the theorist who stands by his colors and will not be convinced, even by actual every day success that goes counter to his own self-created reasoning, should bear in mind that in other lines, notably that of the steam engine, practice prevailed before theory and experience growing out of years of operation came in time to form a basis upon which to formulate theories along advanced lines that would not fail utterly when put to the practical test.

No one will contend for a moment that Stephenson calculated a theoretical compression, stroke and bore before attempting his steam locomotive, and then having figured to a nicety, with all due allowances, the exact power it should produce, went ahead to build an engine that would conform exactly to these preconceived requirements. Nor after having achieved something tangible—a creation of the rule of thumb in its entirety—did he theorize on the increase of power to be gained by a variable cut off and take indicator diagrams to substantiate it. These did not come until later, and they developed solely as the result of practice, because that most expressive phrase of the vernacular applies to these first attempts with great force. They were literally "blind pieces of work," and pioneer models were but efforts on the part of the inventors to feel their way.

The whole trend of development of the automobile, to glance over the comparatively few years consumed in coming this far, has been but a process of feeling blindly in the dark. Had it not been for the fact that one theory, at least, was tenaciously clung to for so long, it is probable that development of the power driven vehicle might have been even more rapid than it has. This was the "horseless" idea, and undoubtedly it was the striving to simply replace the equine motive power without in any way altering the character or appearance of the vehicle itself that gave rise to the saying quoted above. The road roller and the traction engine are but automobiles—ponderous and slow moving, to be sure, but well within the definition of the term—but they bear not the slightest resemblance to a horse drawn vehicle or one of any other kind, for that matter—they are the creation of engineers.

The plan of adapting the power to the vehicle was adhered to in this country overlong, and the freaks and crudities resulting from it were amazing, to say the least. Then there was an awakening, and first theories were cast to the winds. The process was entirely reversed, and the principle that the motive power is first and the vehicle merely a secondary consideration has since been followed, with the result that is evident on all sides. If the result of several years' development under a regime of skilled engineers would to-day have given us anything even faintly approaching a road roller or traction engine, it is probably just as well that the engineer didn't have anything to do with the automobile at the outset. And, on the whole, it is far better that theory has in his field so frequently had to succumb to practice, otherwise what freaks would have survived to this day to the detriment of all concerned!

Striking at the Root.

There is but one way to eradicate an evil and that is to strike at the root of it.

The root of the legislative evil is the registration or licensing system. Without it most of the "statesmen" who are just now given to framing laws for the "protection of the public" would be lost. They are all possessed of the idea that the exaction of a fee and the display of numbers constitute a talisman that magically checks speed and conserves the public safety.

But, strange to say, although life is pre-

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cious and although it hurts as much to be injured by a farm wagon as by an automobile, the fees and tags are for the latter only, suggesting that the public enjoys, or at any rate does not mind, being maimed or killed by other than the motor cars. If this were not the case and numbered tags really were magical preservers of life and limb, these earnest statesmen would require that they be applied to all vehicles of whatever sort.

However this may be, the fee and the tag are as stated at the root of all the legislative evil levelled at automobilists. As we so often urged to be done, and as we said at the time the appropriation for the purpose was made, the decision of the N. A. A. M. to attack the registration system is in the nature of striking at the root. It is good news that the first blow is about to fall. It is news the importance of which cannot be minimized. It is a blow for that freedom of travel—for that free use of the common roads that is the inheritance and constitutional right of free men in free countries. We will now soon know whether legislatures can convert that right into a privilege which must be paid for.

Tires and Their Selection.

How to buy tires would form a rather difficult subject to give advice on, except to repeat that in this, as in everything else, the old saw applies that the best is far and away the cheapest in the long run. Just as all whiskey is good and all girls are pretty, all tires are some good, but some are better than others. At best it is probably one of the last places on the car on which to attempt to economize, as the owner who undertakes it shortly finds out to his disgust.

Rubber may well be compared with gold—it is sui generis—entirely in a class of its own, and substances which the manufacturers proudly claim to be "near rubber" or some similarly alluring term, which, when said quickly with no great emphasis on the adjective, is misleading, prove their intrinsic worth to be about the same as "near-gold." There is nothing to take its place except where appearance in the finished article is concerned, and as it is expensive, cheapness in the selling price of the tire can only mean one thing—substitutes, ranging downward in inferiority with the decrease in the quid pro quo.

A thousand and one attempts have been made to produce a satisfactory substitute or to manufacture rubber by synthetic processes, and for certain purposes, such as electric insulation, substances have been discovered which fill the requirements, but so far as the subject under consideration is concerned, the countless efforts made and still making have brought the solution of the problem not a whit nearer than at the outset.

Cheapness in bicycle tires was carried to an extent where the only rubber employed was rubber-colored paint applied to papier maché, a bias strip of which was wound into a tube in the same manner as mailing tubes are formed, and reinforced with a layer or two or cheap canvas. There need be little fear that the automobile tire can ever reach this level of degradation, as it could not be made to bear the weight of a car, no matter how light. But competition in the tire field is becoming razor edged, and that portion of the trade to which this means nothing more than price regardless of worth is prone to resort to methods not far short of this in order to be in a position to undersell.

The "something for nothing" desire is a trait of human nature, so strong that it afflicts the millionaire as well as those less well provided with coin—in some cases to a greater degree. But if there is one thing about the car more than any other to which the saying "save a dollar and lose ten" is applicable, that is the tire, and economy here not only means endless trouble, but usually a new set of tires as well, so that probably the best advice where the "footwear" of the automobile is concerned is to buy the best to be had, for the recollection of quality remains long after the price is forgotten.

The American Car Abroad.

American made automobiles, like their predecessors in the same field, the American bicycle, are now steadily encroaching more and more upon the English market. Both the trade and the daily press in Great Britain, while condescending to recognize the existence of an American industry in this connection, and, further, that the same infant is making very sturdy strides—as to admitting that there can be such a thing as a comparison between it and that of England and France, oh, dear, no; simply absurd, old fellow.

Where France is concerned the handicap has been great, but the marvellous manner in which the lead gained by several years' anticipation on the part of the Frenchman, has been cut down by the American is too much in evidence to call for comment. England was backward in seriously taking up the automobile, and can hardly lay claim to any priority in this direction. And now that she has gone in for it heart and soul, British capital is literally being poured into the French industry—the amount of English money now employed in building cars in France is amazing, to say the least, and instead of being kept at home by inducements offered there, it is being increased to an extent that moves the press of the island to cry out against it.

While admitting the existence and rapid growth of the American industry, the English trade, and particularly its organs, balk at believing accounts of it even though related by one of their own and substantiated by photographic evidence. A striking instance of this came to light upon the return home of an English agent from the factory in this country which he represents. The works in question probably turn out more light runabouts in the course of a year than any manufacturer on the globe, and their product is likewise to be found in all quarters of it. What undoubtedly roused the ire of the Englishmen to the greatest pitch was a photograph purporting to show a storage shed containing one thousand cars. One scoffer railed at the idea that a shed large enough to shelter such a number of cars had ever been built, and asserted with great heat that it was extremely doubtful if there were a hundred cars in the storage room—the picture did not give evidence of more than that number, according to his idea. And he was not the only unbeliever to raise his voice at the "ridiculous Yankee exaggeration." Seemingly the shoe must pinch these irate gentlemen, for loud howls are usually a good indication of at least some pain.

In the mind of the hungry legislator the men who use automobiles are all millionaires. In some legislatures the rich man is considered legitimate prey. The way to make him disgorge or purchase "mercy," is to "frame up" a bill affecting his interests or any one of them. These are termed "strike bills." It is a common accusation that there are some very hungry men in the New York Legislature.

The owner of a motor car is about the only man in New-York at this time with license to smile. He is practically the only person who is able to reach his business on time, and who can snap his fingers at the strike on the subway and elevated railways.

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SMOTHERING SCOVEL'S BILL

Army of Motorists Invade New Jersey's Capital —Former Governor's Inconsistency Exposed.

It is not probable that much more will be heard of Assemblyman Scovel and his amendments to the automobile law designed to pick $5 per year out of the pockets of all motorists who may use the roads of New Jersey and to place them at the mercy of every crossroads constable in the State.

Following a campaign carried out by W. E. Scarritt and James B. Dill, which simply deluged the Governor and members of the Legislature with protests against the bill, the automobilists, some 200 strong, invaded the capital at Trenton on Tuesday last and presented such a strong front and advanced such strong arguments that if the measure ever issues from the committee room it will cause unlimited surprise.

Tuesday was the date of the public hearing before the House Committee on Municipal Affairs, of which Mr. Scovel himself is chairman.

The speakers were introduced by Wilbur F. Sadler, a Trenton attorney. He desired, he said, to impress upon the committee the fact that there is upward of $10,000,000 invested in this State in automobile interests. The garage interests alone amounted, he said, to $3,000,000. In the manufacture of automobiles there is an investment of $4,000,000.

The automobilists took the position that there is no necessity for any change in the existing statutes and that it is not advisable to change a law which has become a model for adoption by other States. Karl G. Roebling, of this city, made an address showing the various uses to which automobiles are put, laying stress on their adaptability for business purposes and for social enjoyment.

Frederick R. Pratt, president of the New Jersey Automobile and Motor Club, said that his club had been organized for the mutual protection of owners of motor vehicles, and that the club will not in any manner sustain a member who is a reckless driver. An object of the club is to punish any member who violates the law, either as to speed or otherwise.

Richard C. Jenkinson, of Newark, spoke of the value of the automobile industry and its worth to the people in general. He declared his belief that the pending amendments are unconstitutional. When questioned on this point by former Senator Lewis J. Martin Mr. Jenkinson declared that the State is forbidden to issue letters of marque and reprisal, yet the pending amendments take on such a character.

He declared it to be wrong in principle to single out automobilists as a class who can be arrested without the regular processes of law. The proposed amendments simply make an automobile owner a criminal and appoint the country constable as his executioner.

Winthrop E. Scarritt declared the Scovel law now on the statute books to be the ideal law, and that no change should be made. He asserted that the proposed legislation against automobiles in the New York Legislature had been practically killed after a hearing at which he was one of the speakers.

James B. Dill protested against the amendments. He spoke of the recommendation which Governor Murphy had made to limit the motor capacity of automobiles to twenty miles an hour, and pointed out his inconsistency by stating that within the last fortnight Governor Murphy's son had purchased a car of 40 horsepower, which, on its high speed, could not travel at less than forty miles an hour. Mr. Dill said it was only fair to the Governor for the people to know that the Governor signed the check that paid for the car.

While friends of the bill were not numerous at the hearing, yet good pleas were made for them by D. B. Denise, of Monmouth County, a prominent member of the State Board of Agriculture, and David Horner, of Camden. They said they appeared in behalf of horse owners of the State whose rights had been trampled upon by reckless automobilists. It was a common occurrence to drive machines at railroad speed through the farming districts, and a menace to life and limb of the people who had occasion to use the highways. Like so many people they seemed to believe that the roads were built for horses and not for men.

They said the horses were here before automobiles, and, for the vast majority of people, were going to stay here, and it was only common justice for the legislature to safeguard the rights of the greater number of the people whom it represented. Franklin Dye, secretary of the State Board of Agriculture, made a brief statement, in which he claimed that it was a mistake to say that farmers as a class were opposed to automobiles. The farmers, he said, were simply up in arms against a large number of automobile drivers who had no respect for life or the law.

Colonel Edward S. Edwards, of the Society for the Prevention of Cruelty to Animals, spoke in behalf of the Road Horse Association of New Jersey in support of the amendment. He insisted that the owners of horses were entitled to relief. He said that there was no justice in the present law, and for practical purposes it was not worth the paper it was written upon.

Under present conditions, he said, it was necessary to secure a warrant for the arrest of a violator, and by the time a warrant could be obtained the offender was in Connecticut or New York or some other place where he could not be reached. If it was fair to arrest a burglar or a man for the reckless driving of a horse without a warrant, it was fair to arrest an automobile driver who was running his machine beyond the speed limit and in a reckless manner.

The upshot of the hearing was the selection of three opponents of the amendments and three of those who favored it, who are to meet for a heart to heart talk and endeavor to reach an amicable understanding. It is believed that the motorists will have little trouble in winning over the "other side." It is reasonably certain, however, that, even if reported, the bill has absolutely no chance of passage.

TO STRIKE AT THE ROOT

N. A. A. M. Ready to Attack Licensing Laws —Arrests to be Made for the Test.

While legislatures are "piling on the agony" in the form of oppressive laws and automobilists are either fighting back or meekly bearing the yoke, the one way in which to lift the whole miserable load was definitely mapped out on Tuesday last.

On that day the Legislative Committee of the National Association of Automobile Manufacturers met at the office of Counsel Charles Thaddeus Terry, in New York, and decided to at once make the first move in that direction, the N. A. A. M., due to the earnest efforts of the chairman of the committee, George W. Bennett, having several months since made an appropriation of several thousand dollars for the purpose.

Mr. Terry has since been mulling over his law books. He at first considered resort to the Federal Courts to attack the statutes of those States which require non-resident automobilists to pay registration or license fees on the grounds that such acts constitute interference with the interstate commerce law, but at Tuesday's meeting this idea was set aside, and, instead, two or, perhaps three, test cases will be instituted in New York State. The necessary arrests will be made in this city, probably late this week or certainly next week. They will be fought through the State courts and will be carried to the Supreme Court of the United States if necessary.

More than one arrest will be forced, as the law will be disobeyed in two respects, if not three, in order that certain specific points may be settled for all time. Just what they are Mr. Terry will not say, but it is certain that "using an unregistered automobile" will be the basis of one case, since registration is the pivot on which all the State laws revolve.

In order to get quick action and to hurry the cases to decision, it is reported that the District Attorney will be in some way brought into the matter, but when questioned, Mr. Terry only said:

"Oh, leave the District Attorney out of it."

Committee Kills Saxe Bill.

Killed in committee is evidently to be the fate of the obnoxious Saxe amendment, about which such a tempest in a tea kettle has so recently been brewing, if appearances count for anything. In accordance with the plan announced last week, this bill was brought up on Thursday, and a motion to report upon it favorably was made, but voted down—all as arranged.

The Grady bill, which is merely another of the same "increased penalty" ilk, has not been moved in committee as yet.

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Big Injuns Desert Mustangs for Motor Car.



Some of the big chiefs who have been gracing the New York Sportsmen's Show with their presence were inducted into the mysteries of that latest machination of the paleface, which his red brother would most aptly describe as "wagon-fly-without-horses." Louis Deer, White Bear, Dark Cloud, Shungopari, Frank Diebola and Red Eagle, in all their war paint and fixings, were the braves who were treated to a spin in a new 30 H. P. Pope-Toledo.

This most odd combination of the old and new was taken to the Park and there perpetuated by the camera in the very striking photograph shown here.

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NILES ON LEGISLATION

His Address Studded with Advice that Conflicts with His Other Statements.

In his address on the present status of legislation concerning the automobile before the Automobile Club of America at the regular Tuesday evening meeting, W. W. Niles, counsel for the organization took the occasion to state "that in most cases the courts treat automobilists as being on the same terms at law with other highway users, and in almost the next breath amazingly advised automobilists not to fight for such equal rights by attempting to test the constitutionality of the special statutes relating to motor cars, and to have them overthrown on the ground of being class legislation. He said that there is no specific provision in the constitution against class legislation, and that in his opinion the law providing for the licensing of motor cars is not unconstitutional," which will come as a surprise to most of those interested, particularly in view of the fact that the N. A. A. M. are just about to take steps in the matter of testing the constitutionality of the license law on the ground that it discriminates against a certain class of users of the highway and in that respect is double taxation. Mr. Niles formerly was of counsel for the N. A. A. M. Whether the fact that he has "lost his job" influences his present views cannot, of course, be stated.

This was prefaced with a few remarks in regard to his personal experience with the laws now in force through having been called upon to defend automobilists arrested for violations, particularly for speeding. In this connection he said, "that the most illogical feature of any of the laws is that which sets a fixed limit of speed, because a person meaning to be law abiding may unwittingly violate the law when running down hill."

In the opinion of Mr. Niles there are now too many statute laws, and there are and have been sufficient provisions in the statutes against reckless driving without any special enactments for automobilists. He then called attention to certain sections of the Penal Code, particularly that relating to assault, and cited that a menace constitutes an assault and has been so held by the Supreme Court in a case where the driver of one vehicle attempted to run into another, and although he did not actually hit the other vehicle the menace was held to be an assault. Similarly, it was argued, it might be held to be an assault when an automobile was running toward a person or vehicle in a menacing manner.

He said that automobilists should be very meek and quiet unless trod upon or imposed upon, and they should then resent it in a very lively and effective manner.

Following Mr. Niles's address there was a discussion with questioning of the lecturer. In the course of this it was brought out very emphatically that the club's counsel advocates that sufficient law is now found in the general highway statute which provides that no automobilist shall drive at a rate of speed which endangers the life or limb of any person or endangers any property. Automobilists should struggle until only this provision remains on the statute books, he argued, because such an elastic provision is the only sensible and practicable one. He did not explain how this is to be brought about if his advice not to test the legality of the present one-sided statutes is followed.

A. R. Shattuck said that most of the troubles of automobilists are due to the fact that all do not drive with judgment and discretion.

Chicago's Y. M. C. A. in Line.

Automobile owners of Chicago present and prospective, will have a chance to be initiated into the mystery of the inner workings of cars at the Young Men's Christian Association course in automobile construction being organized in that city. The subjects embraced in the course are "Gasolene Automobile Engines," "Gasolene and Gasolene Mixing Devices," "Ignition," "General Features of Gasolene Engines," "Transmission Gears and Clutches," "Wheels, Tires, Springs and Brakes," "General Automobile Construction," "On the Road" and "Troubles and Remedies."

Built Road for Automobiles.

The Tonopah Automobile Co., of the Nevada gold mine region, which recently purchased a Columbia and a Winton to convey passengers between Tonopah and Goldfield, Cal., has completed its new road between these two towns. The highway is twenty-three miles long and cost the company $20,000. The builders intend to keep the route for their own private use, and to that end have petitioned the county commissioners for the privilege of reserving it as a toll road.

Colorado's Automobile Highway.

An automobile highway is being constructed between Colorado Springs and Denver, in Colorado. The road will be 85 miles long and costs approximately $1,000 per mile. Funds have been collected which will permit the immediate completion of 30 miles of the roadway, which will be 30 feet wide, and constructed of disintegrated granite. For several miles the road will follow the Palmer Lake Divide, and will enable touring parties to obtain a splendid view of Pike's Peak, Long's Peak and the Spanish Peaks.

Said No to the Quakers.

The famous Wissahickon drive, in Philadelphia, will continue to be closed to automobilists. A petition presented by Philadelphia automobilists to the Road Committee of the Councils Committee on Fairmount Park, to open the road, proved of no avail.

WOULD TAX HORSEPOWER

Onc ot New York's Innocent Country Legislators Strikes in a New Direction.

One more aspirant for honors in the automobile legislation factory has sprouted in the shape of Senator L'Hammedieu, of the railway and Niagara power grab notoriety, and one more outbreak of the accumulated petty hostility of that portion of the public which poses as the "constityooents" of the gentlemen at Albany is in evidence in the shape of a bill that bears all the earmarks of a "strike."

The following are some of the reasons why there should be such a law and some of the advantages as set forth in the words of its author:

"We must raise $6,000,000 revenue or return to direct taxation. No taxation plan now under consideration will meet the emergency. My bill will help along by about $500,000 a year. According to statistics I have gathered, there are 15,574 automobiles in the State.

"Make the average horsepower sixteen and the aggregate would be over 220,000, yielding $440,000."

"But are not owners of automobiles now compelled to pay a personal tax?"

"They are supposed to pay one, but my bill provides a personal tax exemption. That would be to the advantage of owners of flying machines. The personal tax on a $1,700 machine is about $34. Under my bill it would pay only $24."

There seems but faint doubt that if the fool killer could find time to take a vacation elsewhere, he would find much to do at the State capital when the legislature is in session, for of the other seven bills now in the process of incubation or hibernating in committee, one proposes to give the right to a majority of the land owners of any county to exclude motor vehicles from its highway for a specified period, and as no limit is given for the latter, it is to be presumed, indefinitely. The only requisite to the accomplishment of this somewhat unconstitutional proceeding is a petition on the part of the above named to the Board of Supervisors of the county in question and a resolution by such august body to that effect. In order to give it validity it will only be necessary that signs informing automobile drivers that they are without rights on such highways be posted in sufficiently conspicuous places as to be easily legible. What would happen to the automobilist committing such a wanton trespass or to what extent he would be mulcted if unfortunate enough to be caught, that wise solon, Assemblyman Smith, who is its sponsor, does not seem to have provided for.

Some "constityooent" must be an inventor and takes this way of introducing the result of his genius on a long suffering public, as his representative has perpetrated a bill

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Oldfield on the Dallas Track.



OLDFIELD AT THE WHEEL; COL. GREEN STANDING BEHIND HIM.

to require every automobile to be fitted with an automatic device which prevents its speed from exceeding the legal limit. And these are only two of the seven; the Hall of Fame is much too small.

And as if it were not bad enough that the legislative mill up the State were working overtime in grinding out bills, many of which seem to be produced solely for the purpose of being "settled"—that is, quietly lubricated out of existence when their sponsors have been "seen,' the city's police commissioner takes it upon himself to butt in by stating that "imprisonment of automobilists who violate the speed law is the surest way of having the ordinance enforced." This comment was called forth by the receipt of a letter from a member of an automobile club, calling his attention to the West Ender's bill, and stating that the penalty was too severe.

"In my opinion," said Commissioner McAdoo, "making an example of some wealthy automobilist by giving him six months' imprisonment would have more effect than all the new laws proposed." It might be equally effective in suppressing some other evils to which a great amount of public attention is directed, such as—well, keeping the children off the grass in the parks.

Oldfield Performs at Dallas.

Not satisfied with driving his Peerless over the Texas track in 1:06 2-5, February 25, Barney Oldfield remained in Dallas and made good his promise to circle the course in less than a minute. He did so last Saturday afternoon, covering the mile in 59 seconds from a flying start. Oldfield at first intended to try three miles from a standing start and three from a flying start, but on the third mile his engine went wrong, and he had to be content with what he done.

The first mile was made from a standing start, and was negotiated in 1:13. The second mile, in which the 59 seconds was made, was, of course, from a flying start, being one of those intermediate miles which the A. A. A. is snuffing out. While slewing around one of the turns in the next mile the trouble occurred, and the exhibition had to be declared off. Oldfield's car will have to be sent back to the Peerless factory, and in the meantime his Southern dates will have to be cancelled.

It was intended to run the postponed fifty-mile race between Colonel E. H. R. Green's Pope-Toledo and J. Howard Hughes's Peerless on Saturday, but the latter's car is still out of commission, the new crank shaft not having been received from the factory.

Brighton Track to be Kept Busy.

Having been incorporated with William A. Engeman, J. G. Battersby and Charles H. Hyde as directors, the Brighton Beach Automobile Club proposes to hold a series of race meets on the track near the seashore the coming summer. The track is to be resurfaced and banked eight feet high on the outer edge. It is expected to open the track for trials on April 1. John R. Eustis, the well-known Brooklyn newspaper man, has been appointed manager.

Long Sight-Seeing Coach Route.

The Long Island Automobile Observation Co., of West Hampton Beach, has been incorporated, with $10,000. The company will carry passengers and freight from the New York City line on South Country Road, near Jamaica, L. I., and thence easterly along the road to Amagansett, L. I., a distance of about 100 miles. The directors are: Gustav H. Ludtke, George L. Robinson, George M. Auten, William H. Slatterly and Henry B. Lake.

King Compelled to Register.

King Alfonso of Spain has been forced, through public sentiment, to take out two licenses for his car, and to register himself as a chauffeur.

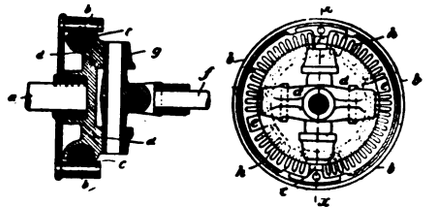
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NOVELTY IN TRANSMISSIONS

New Ideas Reduced to Practice Abroad—The Efforts to Produce Magnetic Clutches.

Judging from the number of novel forms being placed on the market for the coming season the problems of transmission and clutch construction are evidently receiving more than usual attention from the designers and builders abroad.

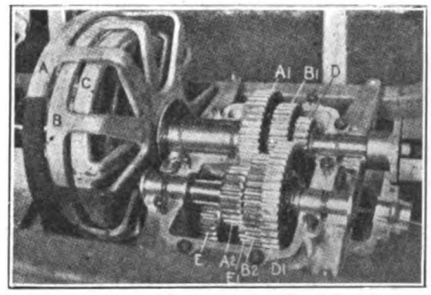
The "Metallurgique" car made in Belgium exhibits departures in this direction in the shape of an internally expanding metal clutch of novel design and a spring drive on the end of the cardan shaft, transmission being by live axle. The expanding clutch takes the form of two brake segments, which are expanded against the inside surface of the flywheel rim by means of a cone sliding on the clutch-shaft, and actuating the segments by means of short arms carying rollers at their ends. The spring drive is mounted



METALLURGIQUE CLUTCH.

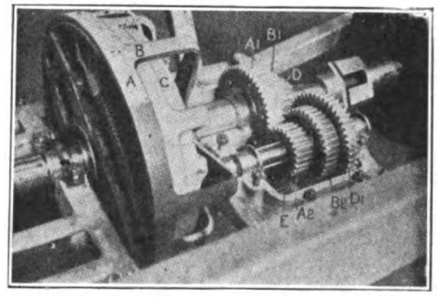
in a drum, b, set on the end of the bevel pinion spindle, a, having two lugs, c, opposite to each other projecting inwards from the rim. The cardan shaft ends in a forked piece, d, each end of which bears against one end of a spiral spring, h, laid round the disc, and bearing as to its other end on one of the projecting lugs, c, the power being transmitted through the forked ends, the sprigs, and the lugs on the drum, and the latter to the bevel pinion. The device is claimed to prevent shock on the bevel drive and to considerably reduce the noise.

Another novelty in the shape of a clutch is the "Octopus," operating by means of hydraulic power and manufactured by the Wilkinson Sword Company, Ltd., of Acton, England. The device, which has been designed by an Italian engineer to take the place of the ordinary leather faced clutch, is illustrated herewith, showing a sectional elevation and front view of the clutch, from which it will be seen that the flywheel rim 1 is cast eccentrically with regard to its thickness, but for the purpose of balancing the wheel the eccentricity of the circles forming the inner edges of the rim are opposed to each other. On a squared portion of the clutch shaft 12 is mounted the clutch body, which is cast of phosphor bronze, to form four plunger barrels and four valve chambers. In the plunger barrels are set plungers 6 carrying at their outer forked ends friction rollers. In view of the fact that the clutch body is mounted on the clutch shaft, the centre of which is the centre of the flywheel, it will be seen that as the flywheel revolves the plungers 6 must move up and down in their respective barrels, if there is nothing therein to impede such movement, or if the clutch body is held stationary. This reciprocating movement of the plungers is, of course, due to the eccentricity of the inner periphery of the steel ring 4 to the centre of the clutch shaft. The two vertical plungers are shown at either extreme of their



BRUSH TRANSMISSION.

strokes, the upper one being right out and the lower one right in, while the two in the horizontal position are at half stroke. The hollow parts of the clutch body are filled with oil, and the plungers can make the up and down motions in the respective barrels so long as the oil is free to flow from one part to the other; but when the clutch is in, or driving, the oil cannot so circulate, this being only possible by the lifting of the valves 7 from their seatings. While they remain closed the oil cannot pass from beneath a descending plunger to below a rising plunger; consequently, the eccen-

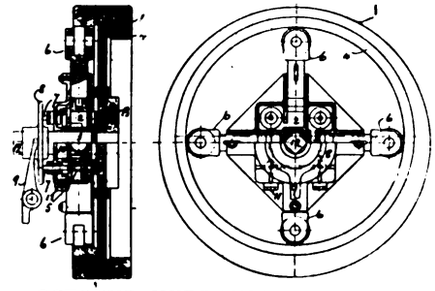


BRUSH TRANSMISSION (Front View).

tricity of the inner surface of the flywheel causes the flywheel and the clutch body to become locked together, the power of the engine being transmitted to the gear box. When the clutch has to be disconnected the fork arms 9 are caused to exert pressure upon the sliding disc 8, which in its turn conveys this pressure equally upon the four projecting ends of the valve spindles 7. By these means the four valves can be raised from their seatings to any desired degree, so bringing about as much or as little slip of the clutch as is desired. The valves are so arranged that the higher the lift of the same the greater the quantity of oil circulating through them. The clutch is claimed to be both smooth and certain in its action.

In order to overcome the disadvantages of the sliding gear transmission a novel form of change speed gear has been designed and will be employed on the Brush motor buses, built in England. As will be noted by reference to the illustrations showing this combined clutch and gear, three independent friction clutches of the expanding type, A, B and C, are employed to introduce the three forward speeds alternatively; the clutch A locks the wheel A1 to the driven shaft so that the power is then transmitted through the wheels D, D1, A2 and A1; the clutch B locks the wheel B1 to the driven shaft, and the clutch C gives a direct through drive. For the reverse the wheels A1 and A2 are separated and the pinion E introduced between them.

In this connection reference may well be made to the magnetic form of clutch which at one time seemingly held forth great promise as it can only be a matter of time when with increasing horse power the leather-faced clutch will become inadequate to transmit the constantly increasing driving torque. Experiments along this line have evidently



OCTOPUS HYDRAULIC CLUTCH.

been confined almost entirely to private individuals, who, once their curiosity was satisfied were apparently content to drop the matter, for despite the reports cropping out from time to time that certain continental manufacturers of prominence had decided to adopt this form of clutch it has never been applied to their cars for the market.

At the recent Paris show it would have existed as a fading memory of a "has-been-tried" but for the fact that it was actually in evidence on one car. So far as its operation in service went, it was found to do away with the drawbacks of the first clutches, but on the other hand introduced new ones of its own which more than counteracted its good points. With its aid it was found possible to start easily without jerking, and its hold was positive—in fact too much so, for here is where the difficulty lay—the residual magnetism was evidently too great, for a prompt release could not be depended upon, there being a decided tendency to drag when a quick disengagement was desired. This may have been due more to faulty design than any defect inherent in the device itself, but apart from this there are more than sufficient reasons why the magnetic clutch has not met with a favorable reception in automobile design.

In the first place, the magnetic clutch, unlike the ordinary friction clutch, constantly consumes a small amount of power when in action. It requires a source of electrical energy for energizing its coil, and this ener-

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gy is consumed while the clutch is in operation. Its use means added complication and weight and entails the installation of a more or less delicate character which may be expected to be productive of occasional trouble. Then, while magnetic clutches are very efficient when run dry, there is a considerable loss of power when they work in proximity to oil. Present indications are that the magnetic clutch has been passed by in the progress of automobile development.

This recalls another attempt to utilize electricity on the car, in this instance to take the place of clutch and transmission altogether; that is, to eliminate them entirely and in their place to substitute a system which for elasticity and ease of control within the widest ranges of speed and power could hardly be improved upon. Instead of the usual flywheel, the end of the motor shaft would carry the armature of a fair sized direct curent generator and the speed of the motor could accordingly always be constant regardless of the speed of the car or whether on the level or an up grade, as there was to be no mechanical connection whatever between the engine and the driving wheels. Directly behind the dynamo operated by the latter was to be placed an electric motor driving the rear wheels through a propeller shaft and live axle. Current was conducted from the dynamo to a controller and set of resistances by which the electric motor could be governed and sent ahead or backward at any speed up to the maximum. Accumulators in shunt with the generator were provided for starting, lighting and ignition purposes and in theory the system worked out beautifully, but the closest approach to it that has been seen in practice in this country is represented by the Fischer system, which differs in that the entire output of the generator is stored in the batteries and the latter are utilized in exactly the same manner as in the ordinary electric driven vehicle, whereas in the system in question the electric motor's function was to take the place of the clutch and change speed gearing entirely—it was not considered as a source of power in itself, but more as a means of transmitting what the engine developed.

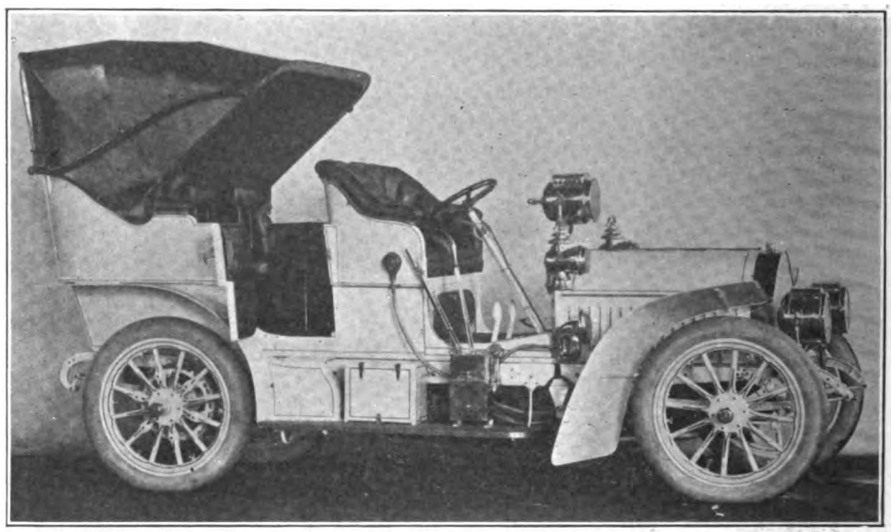
Toronto Holds a "Show" After a Fashion.

Although the Toronto Show was declared off, the Canada Cycle and Motor Co. tried to partly fill the breach by a makeshift exhibit, primarily to boom its own production, the Russel car, and dubbing it a "show." It was held in the Canada Cycle and Motor Co.'s garage, of course. It lasted the week of February 27 to March 4.

In all there were about forty cars shown, the product of eleven factories. The American cars comprised the Packard, Peerless, Thomas, Stevens-Duryea, Ford, Pope-Toledo, Pope-Tribune, Pope-Hartford and Pope-Waverly. The American cars were relegated to the rear and the Russell gasolene and Ivanhoe electric, two cars produced by the Canada company, were pushed to the front as much as possible. Fisk and Dunlop tires were also exhibited.

The Handsomest Locomobile.

What the Locomobile Co. of Bridgeport, Conn., considers the "handsomest car they ever delivered" was shipped from their factory last week to Dr. H. E. Thomas, of Chicago. It is a 40-45 horsepower car of the latest model, embodying all the improvements adopted as standard for the 1905 locomobile. The body is in pure white,



CONSIDERED THE HANDSOMEST AUTOMOBILE EVER PRODUCED.

relieved by narrow black striping, and both the upholstery and the Victoria top are black. While the motor with which the car is equipped is listed as stated, it is said to have shown 59.3 electrical horsepower on the special testing apparatus devised for the purpose. Some idea of the beauty of the vehicle in its sharply contrasting colors may be gained from the accompanying illustration.

Says Peru Holds Promise.

Americans are very apt to consider that South American republics are far behind the United States in all points of development. Take, for instance, Peru. To the average reader Peru is a country about which little is known except that it is was the scene of conquest in early days of European discovery of this hemisphere. Quite refreshing, then, is the report of Consul Alfred L. M. Gottschalk that the Peruvians are adopting automobiles as a decided commercial advantage.

"Callao is practically the seaport of Lima," says Mr. Gottschalk, "in fact, it is so closely identified with the capital that it may be considered a commercial suburb of the larger city. This condition has been accentuated by the establishment of two steam railroads and a trolley line between the two places. The business district of Callao consists almost exclusively of shipping agencies, branch banks, seaboard consulates and, excepting ship chandlery, there is hardly a commercial establishment of any kind that is not a branch of some Lima firm. As a result of this condition there was need of cheap and rapid means of transportation between the two places. To meet this an automobile line for the carriage of freight has been established, and five cars are already in use, each having a carrying capacity of five metric tons. These cars take freight either direct from the steamers or the docks and deliver them to the stores in Lima, thus necessitating one handling of the goods between the ship and the store."

Consul Gottschalk thinks there is a good opening for American automobile makers, and that it would be advantageous to them to investigate the matter more fully.

German "Pirates" at Work.

One of the most noticeable features of the light cars shown at the recent Berlin show was the slavish following of American lines, exactly as was the case with the bicycle, making it appear that the automobile "made in Germany" will from now on convey as one of its significations the same methods of piracy that characterized the bicycle industry when at its height. Noting the world-wide sucess of the Oldsmobile runabout, several German manufacturers are now turning out home made imitations, which in one instance follow the original even to the shape and location of the escutcheon bearing the name. This is the "Ultramobile," made as a runabout and light tonneau, and rated at 8 horsepower in both styles.

Strike is Delaying Foreign Trade.

According to advices from Paris, automobile makers are being caused considerable delay and inconvenience by a strike of coach builders; indeed, they are said to be practically at a standstill, as their spring deliveries cannot be made until the strike is settled. For instance, it is stated that forty-five Mercedes chassis are waiting for bodies in the workshops of Rothschild & Kellner, and the makers are planning to have the bodies built abroad if the strike does not end this week.

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The Automobile in the Inaugural Parade.



For the first time in its history the automobile has figured as a feature of the inaugural parade and the distinction of being the pioneer in this role is owing to a White steam car, which "marched" with the 23d Regiment of the New York State National Guard as an ambulance, bearing members of the Red Cross staff with the usual equipment of surgical supplies and stretchers.

The introduction of an automobile into the parade was one of the few minor details of the event which had not been submitted to the President for his approval, and there was some speculation as to how he would view the intrusion in the light of his great partiality for the horse. It is said, however, that not alone President Roosevelt, who pointed out the White steamer to Vice-President Fairbanks as an evidence of the widening of the scope of the automobile, but also the spectators along the line of march were quick to appreciate the novelty and utility of the idea.

Counterfeiting the Tire Protector.

To what base uses has the non-skidding device been put! Designed originally as an adjunct and protector to the good tire, it now covers the good and bad alike, and under its all enveloping embrace the tire that has reached a point where it is only fit for sale as old rubber is now being palmed off in England on the unsuspecting at prices just sufficiently lower than those of the genuine article to lure the economically bent. How the game is worked is thus related by an automobilist who was drawn into the trap:

"There is one form of non-skid which, after personal experience, I consider it simply a public duty to warn my motoring brethren against. I refer to the tires advertised as 'newly retreaded, fitted non-skid leather covers, never used since retreaded.' I was foolish enough to buy a pair of these. They were quite pretty and substantial-looking—to look at—but a week's running settled them both. One was a worn-out old tire, badly separated at the bead; the other had a bad burst through the middle of the tread; a neat canvas lining inside and the leather tread outside effectually concealed these defects. So, 'on approval' is of very little use. Instead of being vulcanized on, the leather cover appeared to be fixed with office gum or some equally powerful adherent, while a bit of tape was stuck round the edge by the beading. Once the leather was loosened it stripped off easily from the cover by slipping the thumb round the tire. Any old worn-out covers appear to be used, covered inside with canvas, outside with 'non-skid leather bands,' and advertised for sale. The process is simple, and, I should imagine, profitable."

This is the experience of one economist; here is the plaint of another, who evidently stacked up against the same process, but was not even so fortunate as to get a week's wear out of his bargain.

"I recently bought a pair of 810 by 90 mm 'newly retreaded, never used since' tires. These were sent on approval and looked nice; naturally I did not try them before sending check in payment. A few weeks later I had occasion to use them. They were put on the front wheels and inflated to 65 pounds' pressure. One ripped up after standing a quarter of an hour, the other following a little later, neither having run a yard."

To Mitigate the Searchlight Evil.

The Automobile Club de France is issuing a circular to its members urging them not to use powerful acetylene headlights in towns, in order not to dazzle the eyes of pedestrians and the drivers of other vehicles.

The Dayton (Ohio) Automobile School has been organized with these officers: President, Scott McDonald; vice-president, Howard Johnson; secretary, J. F. Taylor.

How the Circus Lady "Defies Death."

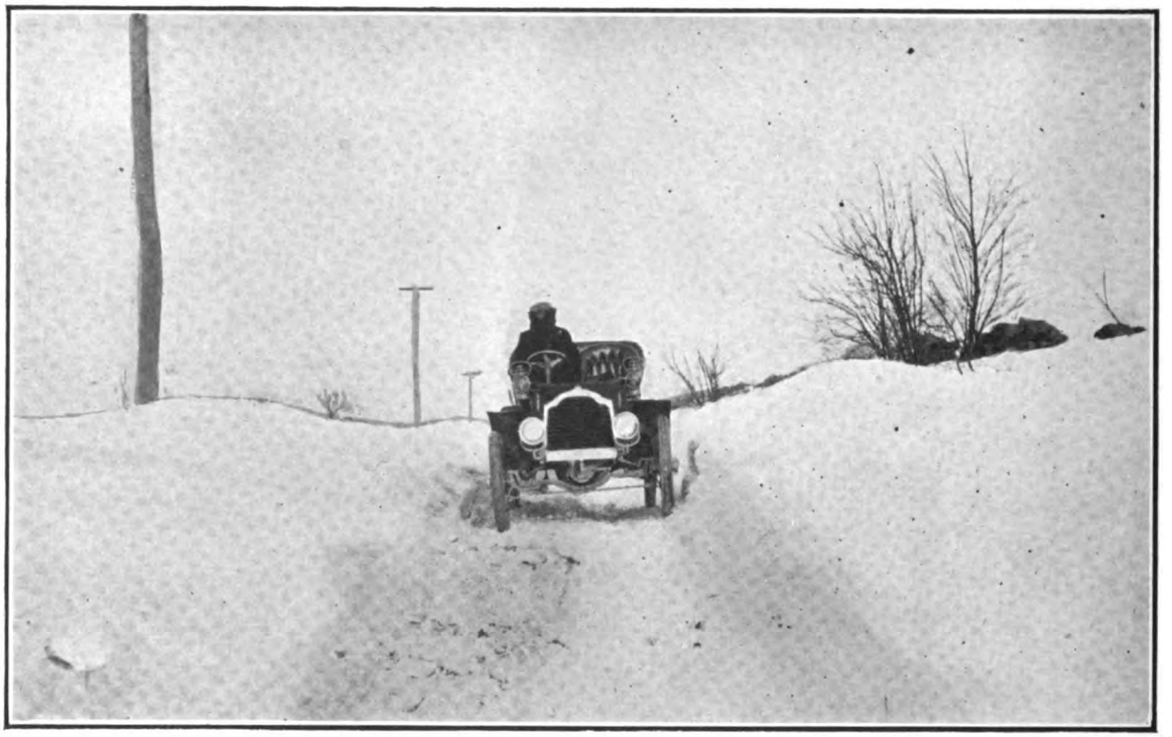
First it was the "cycle whirl," then followed the "loop-the-loop," and next came the "loop-the-gap." The multitudes who witnesed these feats pronounced them the acme of sensationalism, and said they ought to be prohibited, but still they flocked to witness the exhibitions. But Barnum & Bailey's circus has the latest "thriller," and it is to be presented to a skeptical public when the show opens in Madison Square Garden, New York, March 25.

"L'Auto Bolide" is the name of the new act, which comes direct from the Folies Bergères, and Mlle. Maurica de Tiers, an intrepid young Frenchwoman, will demonstrate looping-the-gap seated in an automobile.

Of different arrangement than other frameworks of the well known "loop-the-gap" acts, the automobile starts from a platform as high as a three story house and shoots down a declivity at an angle of 60 degrees, which is in form the outside of a gigantic letter S inverted. As the lower curve of the S is reached the automobile and its rider are suspended upside down and spring forty-five feet across the "gap." The steel framework here supports a curved runaway that begins in a half moon shape and straightens into an easy incline to the ground, where the young woman and her automobile complete their journey.

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"For Rain or Snow or Any Kind of Weather."



ON THE SNOW COVERED ROADS NEAR STAMFORD, CONN.

Progress Slow in Sweden.

Automobiles were first seen in Gottenburg, Sweden, in 1901. In three years the number has not increased to any alarming extent, as now there are but fourteen in the city, which is the largest and most important town in Sweden. The roads in this country are fairly good, but cannot by any means be considered ideal for automobile travel. They are, as a rule, too narrow and slope too much from the middle toward the sides. The cars are mostly used within the city limits, and seldom on long tours. One of the reasons for the scarcity of horseless vehicles in this town of two hundred thousand inhabitants is that few people are really sufficiently wealthy to afford such luxuries; therefore the price here will always be an important factor, in view of the fact that no automobiles are manufactured in the country, thus making them more expensive than elsewhere. The import duty on automobiles is 15 per cent ad valorem, costs, insurance and freight entering into the dutiable value. The duty on gasolene motors is 10 per cent and 15 per cent on electric motors.

Partners Disagree; Litigation Follows.

On April 11 last Charles F. Holley and George Gilmore, of Delray, Mich., formed a partnership to do a general automobile repair business, and each put $425 into the firm's treasury. On July 1, 1904, the firm ceased operation by mutual consent, and now Holley has gone to court and asked that Gilmore be compelled to give an accounting for what he has done with the assets of the concern.

In the Retail World.

The Linscott Motor Company, Boston, Mass., have added the Corbin car to their line.

Dey Bros., & Co., Syracuse, N. Y., are having a garage built for them. The building will be of brick, 25x100 feet.

The Wilmington Automobile Co. Wilmington, Del., is this week taking possession of its new garage at Tenth and Tatnell streets.

Eugene Atkins and F. W. Wickshire have started, on a small scale, to supply Elkhart, Ind., residents with automobiles. They have the agency for only eighteen cars.

The printed report that Russell Drisko, of Boston, had signed the agency for the Stevens-Duryea car was based on misunderstanding. The agency will remain, as it has remained for three years, with F. E. Randall, with whom Drisko is connected.

Arthur M. Butts, of Oneonta, N. Y., has purchased the property at 8 South Main street, that city, and will erect a three story brick garage. The building will be equipped with a power elevator and the upper floors utilized for storage purposes.

Another of those "local shows" which seem about to become the fashion, and which furnish good advertising for the garages in which they are held, is scheduled for Hartford, Conn., March 22 to 24. It will be held in the Palace Automobile Garage, at 122 Trumbull street. Locomobiles, Autocars, Pope-Hartford, Pope-Tribune and Pope-Toledo cars will be shown.

One More Selden Suit Settled.

Peace will reign once more for Melville D. Chapman, the New York stock broker, who through his purchase of a French car directed to himself the attentions of the Association of Licensed Automobile Manufacturers. A decree of infringement of the Selden patent was entered against him by Judge Lacombe last Friday, sitting in the United States District Court, in an action instituted by the Electric Vehicle Company, and the papers were served upon the defendant on Tuesday last, but the latter compromised and settled the case.

A mighty protest was forthcoming at first, and Mr. Chapman swore that he would fight the suit to the last ditch, regardless of time or expense. In explanation of this sudden surrender it is said that the settlement was brought about by E. R. Chapman, the father of the defendant who had acted in the matter without the latter's knowledge during his absence. Mr. Chapman, sr., says he did so on the ground that defending the suit would have taken a great deal of time and money. He further complained that the plaintiffs declined to let the individual suits rest and be decided by the results of suits against corporations now in progress, which would entail the retaking of voluminous testimony.

Fire in a freight car in the New York Central and Hudson River Railroad yards, Thirty-first street and Eleventh avenue, New York City, Tuesday, wrought $400 damage to a carload of Simplex cars being shipped by Smith & Mabley, New York.

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GOING FURTHER UPTOWN

How the New York Trade Has Drifted Parkward—New Garages Built and Building.

The march of progress is nowhere better illustrated than in the spread of a city's growth. The expansion takes place, not simply in an increase of the area covered by buildings, the filling in of suburban districts; but in and through its every quarter. The increased volume of high commercial and financial interests, with their parasite following, force the local and retail traders out and away from the old centres to sections where they have more room and better facilities to ply their trade. And they in turn, force others, dealers and residents, to seek new quarters farther out. And so it goes on, a wonder of the ages at which one never ceases to marvel.

This process of growth tends to bring together allied and rival interests in the many different sorts of business, with neighborhoods or quarters which are best suited to their needs, and the sharper the rivalry, the closer the competition, the closer they huddle together. If, perchance, one separate and betake himself to a new locality, he is regarded almost as an alien; but if the wisdom of his choice be very apparent, behold, a grand stampede of one and all, to his side.

New York's invasion by the automobile began in a very modest way. Here and there, where he found room, a dealer hung out his shingle. Later, as there was need, real or fancied, a man here and a man there changed the sign over a stable door, and lo, a new garage. But presently, business began to take positive active shape, and the increased rivalry soon developed the tendency to get together, as it were, and the Thirty-eighth street district was formed. And a lively little quarter it soon got to be. A year or two, however, so increased the volume of business that some of the old standbys began to be a bit crowded for space. A new row was formed on Thirty-ninth street, but there was no room for the new comers, so they began to crop out here and there along upper Broadway.

A couple of years or so ago, its proximity to the old Central and Mobile garages and its location on the way from the "street" to the Boulevard and Park sections, attracted two or three tire and parts dealers to the section of upper Broadway lying between Fifty-third street and the Circle. Soon afterward the Winton people, finding the old theatre on Fifty-eighth street too cramped for their needs, and its location east of Lexington avenue too remote from the trend of business, decided to build, and wisely chose the location on the east side of Broadway, between Fifty-fourth and Fifty-fifth streets. Other dealers, great and small, began to crowd in above and below, and presently there was talk of a new mecca for the motorist somewhere between Longacre Square and the Circle.

Soon the idea crystalized, and the dealers began to reach out and grab for locations. First came the Pope interests, with a swell three story building, on the west side at Fifty-fifth street. They are established in it already, though it is not entirely completed. The Packard agency remodelled an old building down in Longacre, and now boast one of the prettiest salesrooms in the city. C. J. Wridgway, with the Peerless cars, sought a location still nearer the old stamping ground, and has built in on the south side of Forty-first street, close to Seventh avenue. He has a salesroom at the front where he can show three or four big cars, and back of it, storage room for fifty cars or so, while above are a well lighted, well fitted shop, a large stockroom and the executive offices.

With the beginning of the year more plans and more again were laid by the dealers. Harry S. Houpt, of the Thomas agency,, decided to build, and picked out a lot at Seventh avenue and Forty-ninth street. The building will be of standard construction, two stories in height, with offices, dead storage and repair departments on the second floor. The street level will be wholly given over to the uses of a garage, while there will be in all ample accommodation for 140 cars. The old firm of J. B. Brewster & Co. will occupy one-half of the building which is to be of double construction. Work is being advanced so rapidly that the occupants expect to move in by the nrst of May. Another newcomer to the district will be the Standard Company, with a salesroom and garage on Broadway and Fifty-fifth street, and a wing running through to Fifty-sixth. Four stories in height, and thoroughly built, it promises to be one of the best buildings of its class in the city.

Just prior to the announcement of the Standard people, came the publication of the A. C. A.'s choice of site for its new clubhouse on Fifty-fourth street, just west of Broadway, a location which well fits it to be the capitol of automobiledom in New York. For by the time it is completed, there will be over twenty places of business either directly in the automobile line or allied to it, almost within stone's throw. There will be the showrooms of the Winton, Royal, Speedway, Haynes, Rochet-Schneider, Oldsmobile, Pierce, Mitchell, Queen, Baker, Pope, Brasier, Thomas, Stevens-Duryea and Decauville, to say nothing of their connected garages, and four tire depots.

All this represents quite an amount of capital outlay, and though its exact amount cannot be easily reckoned, some idea of it can be obtained from the statement that the cost of demonstrating cars alone adds up to over $50,000.

Waterbury, Conn., is to have a "show," and if the plans of the E. H. Towle Co. materialize it will take place the latter part of this month. The exhibit will be held in the company's garage on Harrison street, and will be free, of course.

SWISS ARE PREJUDICED

Why They Do Not Incline Favorably to American Cars—Chance for a Low-Priced Model.

"There is only one house in Basel, Switzerland, doing a considerable business in automobiles, C. Schlotterbeck," says Consul General Giffon, in his latest report. "It has sold some American cars (of the runabout type) at the price of 4,000 francs ($772). These two or three pioneer machines seemed to give satisfaction at first, but are now said to have lost favor on account of an alleged lack of durability.

"The same objection is made to automobiles of the American type that has always prevented American vehicles from obtaining a foothold in European markets, viz., size and appearance. The people, accustomed to the use of larger material, are afraid the American frame will break down under its burden. It is hard to account for this prejudice, since carriages built with a view to use on the so-called American roads are certainly capable of withstanding the much less serious wear and tear to which they are exposed on the magnificent thoroughfares which are to be found even in the most secluded districts of England, France, Germany and Switzerland.

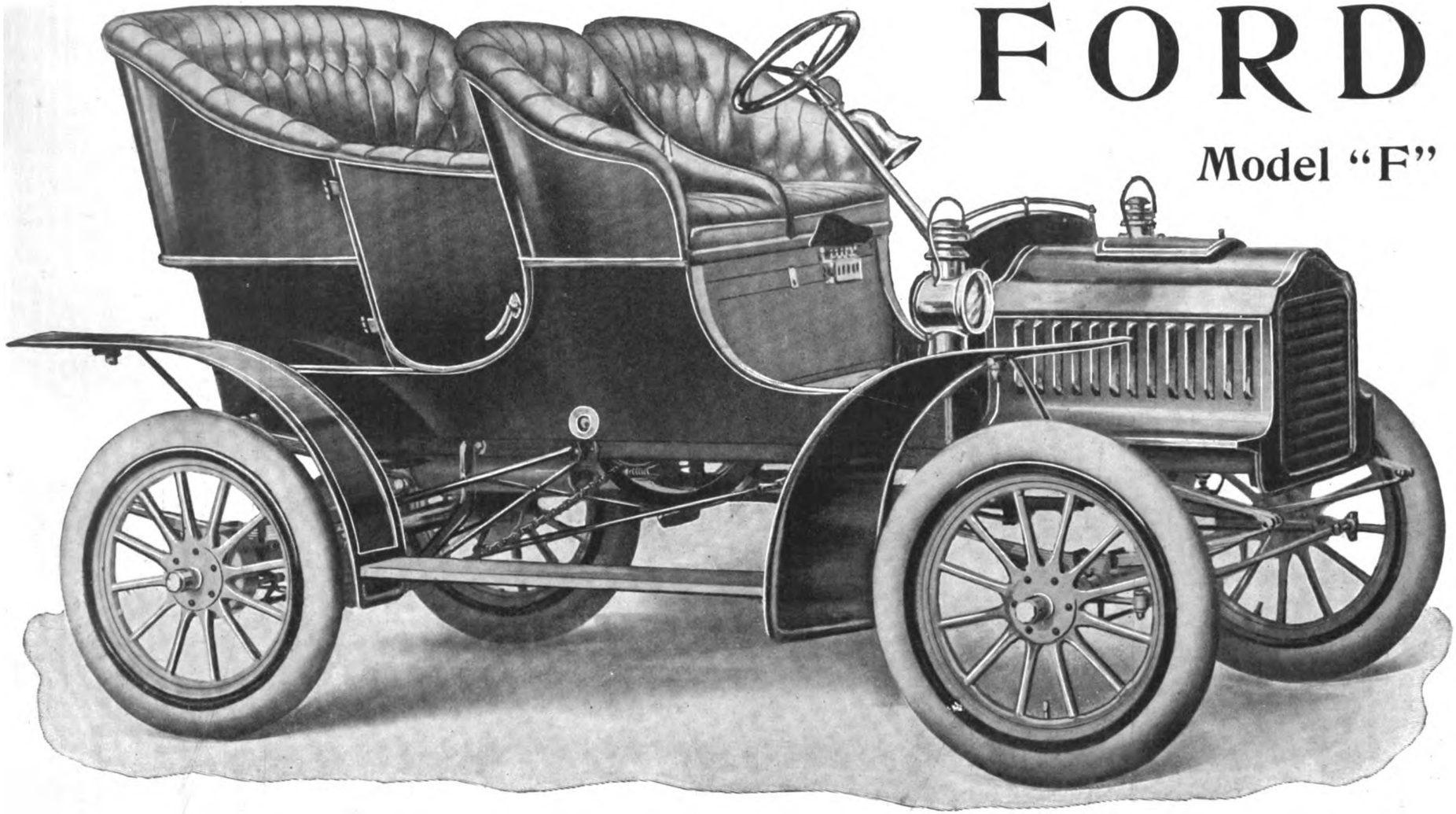
"An American automobile that could be sold much cheaper than the rival types, say for 3,000 francs ($570), for instance, would ever now find many buyers.

"The number of automobiles used in Switzerland is increasing rapidly, and there is sure to be a very large demand for them as soon as the price is low enough to place them within reach of people of moderate means. This country possesses already a number of factories, of which the most important belong to the Messrs. Martini in Frauenfeld. The principal task of the American automobile industry will be to meet successfully the preference, or, if one may say so, 'the prejudice,' for well known foreign and firmly established favorites."

Small Boom in Shanghai.

"Practically speaking, there is no extended market for automobiles in China," says United States Consul Anderson at Hangchau. "In the average Chinese city it would be impossible to use a machine, and there is no prospect of any improvement in the near future of a character to promise any trade. In Shanghai a good many automobiles are in use, and their popularity is increasing. It may almost be said that an automobile boom is on in that city. There are many people there who can afford automobiles and who are accustomed to spend money in such ways, but the demand will be limited to Shanghai City, and machines suitable for city work rather than country touring are the ones needed. Automobile manufacturers in the United States should have representatives among the business men of Shanghai. American makes will be received upon their merits."

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REGARDING RACING

What the Sport Calls For and the Men Best Fitted For It.

In these days of racing achievement, racing failure and racing mishap, one is brought to wonder at all three. The successes of some are marvellous, the failure of others astonishing, and the accidents of still others most deplorable. But on looking at the matter closely one sees that the result must depend almost wholly on the driver, and a close scrutiny of the art of driving makes it quite apparent that the average man is not fitted by nature to handle a racing machine.

For the ability to handle the steering delicately and the instantaneous accord of sense and action which serve in guiding the car, the unanimity of mind and muscle which make it possible for the trained operator to drive his mount at such tremendous speed that his motions must follow the ocular impression with the rapidity of thought, are born with some men and not with others, and although it may be to an extent acquired, that is to say, developed by training, he who is not gifted with that magnificent degree of self-control which has made it possible for a machine guided solely by the unerring instinct of a man's two hands to travel at a rate upward of a hundred miles an hour, can never hope to attain it by the exercise of will force, or by any amount of practice. It is an impossibility and he had better "keep off the course."

The fact that drivers are born, not made, does not in the least qualify the assertion often made that "mechanics make the best drivers." In every walk of life is seen the need of thorough elementary training, the training of experience; in every calling a certain amount of it is absolutely essential to a comprehension of its workings. That the broader and more diversified the experience the better the fitting, goes without saying; and the truism is just as applicable to a sport as to one of the "nobler" professions. And strange as it may seem, its value depends not so much on the degree of intimate familiarity with the details of regular work which it imparts as in its effect of qualification for the meeting of emergencies by the rule of precedent; the former may be learned from books, but knowledge of the latter comes only through the finger tips.

The racing automobile is a complex mechanism, differing from the locomotive, which runs on rails, only in its steering apparatus. That is to say, it has the same essential elements, and its control involves the use of the same general principles. On the railroad, a man may not enter the right side of the cab until he has served his full time in the shop, and suitably acquitted himself in a certain grimy post graduate course down behind the boiler butt; then, and not till then, is he trusted with the actual handling of the machine. Yet in the automobile field a machine to all intents and purposes the same as a locomotive, but far more delicate, because of more complex mechanisms and greater strains, is driven when and where he will by a man whose only qualifications are that he wants to and that it is his property. It is true that these carry weight in equity, but they do not qualify from a mechanical standpoint, and the idea seems a trifle incongruous. For no matter how fit he is naturally, no matter how sound his judgment, and no matter how great has been his experience in driving, he lacks that intimate acquaintance with the car which comes only from living with it day in and day out; long days and Sundays, too; an acquaintance which comes not only from knowing just how each and every part is constructed, but from having actually done a portion of the work and lived in the shop where it was done.

It seems odd enough that to wear dirty clothes and do over and over day by day the same odious, pottering little tasks at the bench in the shop, or about the machine in caring for it, should have any influence over the work of management, but somehow it seems to create a sort of harmony between the man and the machine which cannot come otherwise. The skilled driver knows by the sound, the feel or the ready response of this or that part just how well it is doing its work. The mechanic taking the entire care of a machine knows the precise condition of every part, he remembers just how complete and satisfactory was this adjustment, how incomplete that; he can gauge the effect of wear and tear on every part, and even look into the mechanism in his mind's eye, and see it work. And if he be a good driver at the same time the trained senses which tell of the action of the various parts help him to so complete an understanding of his machine that it seems almost a part of himself, and its control requires no more definite thought action than is necessary for the control of the muscles in walking. And under the keen exhilaration of fast driving his close watch on the movement of every one of the steel sinews beneath him is none the less thorough because it is subdominant to the prime effort of driving.

The return to New York of a well known chauffeur, crippled by a recent accident, is marked by his public criticism of his employer, who, he says, had not had enough experience with road racing, and to use his own expression, "tried to do stunts." This most ungraceful remark serves merely to bring out the point.

An owner, and a clever driver too, in many ways, but lacking experience, attempts to handle a heavy racing car at high speed on a public highway. In negotiating one obstruction he is suddenly brought face to face with a second, hidden by it, and things get all mixed up. You may call it an error in judgment or lack of familiarity with the risks of the road, the facts remain unchanged, and it might not have happened with another man. For statistics show that the majority of accidents of the sort have happened to amateur drivers.

It is no use to discriminate against owners in this respect, for many professional drivers are totally unfit for the work and are getting on only with an abundance of nerve and self-control and a remarkable degree of good luck. But as the owners are far more likely to assume the risk of driving ignorantly or recklessly, because of their independence, it is they who are most in danger and they who suffer most frequently.

Automobile road racing is at best a riskful sport, and a powerful machine even in the hands of a careful, trained operator may become a source of great danger at any instant. But given over into the care of one less expert in the art it becomes at once a menace not only to himself, but to such part of the civilized world as lies within a hundred feet of his course on either side.

The increasing number of heavy, swift cars and the corresponding increase in the number of men who become possessed of a desire to drive fast constitute an increasing danger, local with respect to each individual case, but general in its effect on public sentiment, and it is only to be overcome by a conservative feeling among motorists themselves tending toward a total suppression of the venturesome, devil-may-care spirit which prompts men to drive furiously whether they thoroughly know the art or not. H. A. R.

Ambulance for Army Use.

The automobile ambulance has been formally adopted by the British army. This action was taken after a severe test, in which the new vehicle thoroughly proved its efficiency.

The new ambulance will afford complete protection to doctors and nurses while on active duty on the field. The car is protected by armor shields, and the motor is not only capable of driving a heavy service truck, but of carrying a load of thirty persons. The walls of the car can be folded together while in motion, but when they are spread out a large red cross appears on each side as a sign to friend and foe that the vehicle is used only for hospital purposes.

"The King Can do No Wrong."

Dispatches from Madrid state that one Spanish magistrate has been bold enough, at the risk of royal displeasure, to criticise King Alfonso as regards his operating an automobile. The magistrate declares that the Spanish ruler drives his car faster than the law allows, and furthermore states that the royal car does not carry the official number nor has the license tax for it been paid. The magistrate, who seems to show some spirit of American independence underneath his Spanish training, has been warned by the "high and mighty" Premier to keep his anarchistic remarks to himself.

Paid Fifty Cents for Her Car.

Miss Anna Krakow, a Rockford (Ill.) stenographer, won the $800 automobile raffled off by the Dubuque Baseball Club last week. The winning ticket only cost 50 cents.

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Successful Car Building.

WE are this year standing firmly on the fact that we have built a real car, because we have built a car adapted to American conditions, American roads and the American temperament. We know our American market as no French builder can know it.

We have surmounted the problems of car-building this year as we never surmounted them before, although our progress has been steady and on right lines.

We believe the Pierce car to-day expresses the best that can be had in car-building, and we are willing to abide by the result of actual experiment.

Booklet describing the six 1905 cars of the George N. Pierce Company, with special booklets describing the mechanism of each, will be sent on request.

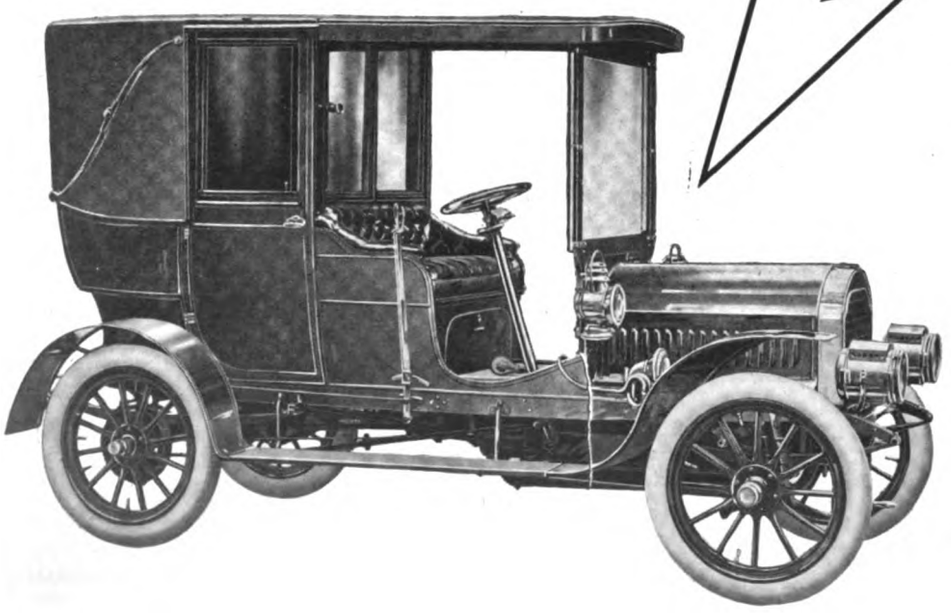
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VALUE OF DEMONSTRATIONS

New York Dealers Express their Opinions—Varied Applications of the Practice.

At just about this time every year when the weather man is revising his wind schedule, and the breaking up of winter is forecast by a warm day now and then, and when the sunshine and fresh air seem sweeter than they ever did before, and the shadows colder, those little itchings premonitory of the coming spring fever begin to assert themselves and all the world sits up and takes notice. And, by the same token, the little ferment which has been active in the motorist's brain ever since "show week" begins to take shape and grow and assert itself until the willing victim yields to its insistence and decides that it is quite time to be looking around for a new car.

Meantime the dealer is busy getting ready for him. He is facing down a whole lot of problems, some of them new, some old, and working up a system which is calculated to net the maximum number of sales at a minimum cost. He is very eager and hopeful, and quite ready for the hurly-burly of the season's rush.

Now among others is one problem which may or may not strike him as of great moment; a problem, however, whose neglect and careless treatment quite as much as the exigencies of the times have in the past cost him many a good dollar, which has gone never to return. The demonstration plays, perhaps, as important a part in the sale of an automobile as does the act of taking down a bolt of cloth and unrolling it on the counter in the sale of drygoods, simply because the human race is cautious and must see in order to believe. But the merchant balks at the idea of "loaning out" his material on trial, and the automobile dealer is often brought to question the wisdom of any but the most limited trial of his car.

In the earlier days of the trade a far different set of conditions obtained than hold at present. Then the demonstration was the most important part of the salesman's work. The public was deeply interested in the possibilities of the horseless vehicle and stood ready to be convinced of its utility; in many cases the prospective buyer was only deterred from committing himself by the thought that one more year's development would reduce certain of the so-called minor difficulties to a state of absolute subjection and make possible the ideal car. The market had to be convinced that "this year's" car was right, and that perfection if not yet obtained, was wellnigh unattainable. Moreover, every designer was an inventor, most alarmingly prolific of results; every builder had a system all his own for the doing of this or that; and every car fairly bristled with novel features, they stuck out all over it, and hence the different types of any season had very little in common. The salesman had to convince the customer of the wonderful superiority of his line over its competitors, and it was often uphill work, for the rivalry was intense and vital, since the continuance of a man's business often depended solely on a single season's results, and every sale thus became a triumph of diplomacy, the result of a crafty struggle against thrifty opposition and the heavy odds of a most doubtfully efficient product.

Aside from the direct results obtainable from a successful demonstration to a prospective customer, ther were the cumulative results to be expected from giving a ride to Mr. So-and-so—a man whose good word meant several sales—or in other words the advertising proposition. And in those days, when the individuality of the car was more pronounced than now, and its evil genius so bold as to assert itself when and where it chose, regardless of the wishes of the driver, a perfectly satisfactory demonstrating performance was by no means to be counted on, and a ride of any length which was not fraught with adventure of one sort or another was a thing to be boasted of, so that no opportunity for seed sowing of that sort was to be neglected.

But times have changed and the conditions which held a couple of years ago are now quite reversed. The public, fully convinced of the value of the automobile, is ready and eager to buy. It is no longer necessary, except in rare cases, to teach the operation of the motor, the prime utility of the electric current and the necessity of the transmission. The buyer has in general a pretty well defined idea of what he wants, his choice lies between one of two and one of a dozen cars, maybe, which are apparently suited to his purpose to a certain extent; his deliberation is careful and tempered with the advice of numerous friends; and his final decision must be based on actual experience with the various possibilities. If he be imbued with the universal desire to get a great deal more than his money's worth his verdict may hang fire for a time while he rides in this car and that and has a deal of enjoyment at some one else's expense. Customers of this type, and others of the parasite order, are, alas, quite too common, though their field of operation has become so narrowed down that their rides are few and far between. But their total eradication seems impossible because of the sharp competition of the "street" and the unwillingness on the part of the dealers to concert their action.

Demonstration is then, legitimate, essential if you will, when given to a sincere customer. Given to one whose influence is to be desired, it is equally legitimate, when tempered with moderation. But when used to excess for either of these purposes, or given to those who merely come around for the ride, it is a waste of time and its monetary equivalent. A tour of Broadway and its vicinity from Thirty-eighth street to the Central Park circle, in an effort to discover the present attitude of the dealer with regard to it, produced some interesting results. Everywhere was found a ready recognition of the evil in its past phases, and an almost uniformly optimistic personal attitude toward it.

The general tendency seems to be to be fairly liberal of brief demonstrations, even to give them to persons who casually drop in with the time honored request for a ride. In most salesrooms there is now a fairly complete "follow up system," which is brought to bear on every comer who brings any sort of promise, and which if well carried out, makes the position of the grafter pure and simple, an uncomfortable one. As one well known dealer put it: "The demonstrating car and its driver must be kept on tap, as it were, all the time, and the cost in fuel and wear and tear imposed by practically continuous service is so slightly in excess of that involved in standing the machine at the curb all day with the driver idling about inside, that we feel perfectly justified in taking out almost every comer. But, of course, we limit the ride to a turn in the park or a climb of Duffy's hill, and every one we take out is looked up afterward."

E. T. Birdsall's position was somewhat an exception to the rule. "I don't believe we have given a single demonstration this year," he said. "We seldom find it necessary. Those which we do give are seldom over twenty-five miles long, except in rare cases when an especially long run may be taken on the express condition of a sale unless the car fails to do well."

"Then you depend to a degree on the reputation of your goods, and the testimony of satisfied customers to take its place?' was asked.

"Yes, to a great extent."

"And do you think that the increased standardization of models, and the survival of reputable manufacturing concerns will ultimately tend to make the automobile saleable on represented merit and reputation without the attachment of conditions and the loose business methods which have given the purchaser in the past what has amounted to a privilege of return?"

"Why, yes, to a certain extent. That is to say, the demonstration is yearly becoming of less importance to the sale."

The Motor World man so liked the sound of this question that he put it to A. L. Newton, who is one of the New York Athletic Club's crack runners, and incidentally sells Northerns for Peter Fogarty—and got laughed at. Perhaps Mr. Birdsall had laughed, too, but if so it was not noticeable.

"Why," said Newton, "there are two cases in which the demonstration will always be necessary, cases when it will not suffice to hand over a few testimonials and show the machinery and turn over the motor a few times on the floor just to show how it sounds. There will always be a certain number of people, who have never ridden in a car, and must experience the sensation in order to be convinced that the motor is not a very frightful thing to deal with. And then there are the makers who bring out a new car. They will be without the essential testimonial, and hence must fall back on actual

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demonstration. But if it were possible, it would save a lot of trouble and expense."

At the Electric Vehicle Co.'s store they rely on the perspicacity of the salesman to pick out the bogus customer and serve him up a dish of "frost" in acordance with his deserts.

"Just about a year ago," said an "E. V. man," "a man blew in here one morning in a brand new leather suit, and inquired about our twenty-four horsepower car. He examined it very attentively, and after asking a whole lot of questions, declared himself much pleased with it, but said he couldn't decide until he had ridden in it. He had his ride through the park, and was tremendously pleased. He promised to send us a check for the first deposit in the morning mail. But somehow the check miscarried, and we did not hear from him again until one day last week, when he sauntered in minus the leather suit, but with the same businesslike air. I knew him right away, but he evidently thought I had forgotten him. For he began to ask about this year's machine, displaying about as much knowledge as one might derive from a study of catalogues, and finally asked how she ran, intimating that one could tell but little of a car until he had ridden in it. 'Why,' I said, 'she runs just a little better than last year's model did. You had a ride in that, I believe?' He looked at me for a minute, and then said: 'Oh, yes; I do remember it now; so I did, to be sure.' And it didn't take him long to get out, I can tell you!"

Over on Forty-first street was C. J. Wridgway, just getting settled in his new Peerless garage, and a tight little one it is, too, with everything fixed just right.

"Yes, I know," he said, "lots of time and money have been wasted on demonstrations in the past, but I think the thing will work itself out. I have a little wrinkle of my own in connection with my "follow up system," but, of course, I don't want to give it away. You know I believe the other man's business is his own affair, and I don't propose to interfere with it. I have not felt called upon to give over a dozen demonstrations this year, and I think every one has more than paid for itself."

At the Packard, Pope and Winton stores they tell practically the same story: The grafter pure and simple has not become troublesome so far this year, and the usual programme of a ride in the park seems quite sufficient.

"Our hours are from 9 in the morning until 6 at night," said one, "and we feel perfectly justified in cutting out all night and Sunday work."

Harry S. Houpt, who handles the Thomas car, has been troubled apparently more than the others with the man who refuses to make up his mind.

"Why, I have given eight rides to one man this year," he said, "and haven't landed him yet. But, seriously, I'm glad to have this matter brought up, for there's more in it than many of the dealers would have you believe. Yes, I believe that in some cases a long demonstration is perfectly warranted. For instance, I have arranged to take a party clear up to Poughkeepsie next week, and it will pay me to do it; yet only the other day I turned down a man who wanted me to take him a much shorter distance. It's a matter of judgment, and no fixed rule can be applied to it."

A bit of insight into the state of the market was obtained from Harry Unwin, who declares they have sold more Pierce cars than Olds so far. For it would appear that those who will buy the small cars are confident of immediate deliveries whenever they want the goods, while those who are buying the larger ones realize that it takes time to put up such machines, and in order to make full allowance for such alterations as are involved in putting on tops and repainting, are ordering well in advance of their need. Another interesting fact which he brought out is that the smaller cars sell easier than do the larger. Several of the orders for Oldsmobiles he has booked without a single demonstration. Though his record with the Pierce has averaged not over ten miles to a sale thus far.

Accurate figures in the matter of demonstration mileage are hard to obtain, and they vary widely according to the temperament of the dealer and the quality of the car, as might be expected. Mr. Unwin's figure was the lowest obtained, while the highest was over one hundred miles per sale. This was for a last year's car, however, and covered the entire season's work.

Whatever the millennium may bring in the way of conditions governing the sale of cars, for the present the actual working demonstration is an essential, and the cost of running the demonstrating car is an unavoidable item in the cost of selling. Hence, so long as it must be done in certain cases, it seems wise to be fairly liberal in the treatment of all who apply, even though they be unknown and not promising. But the ride to Coney Island, the ride to Morris Park, and the moonlight spin up Lafayette Boulevard are not generally productive of anything but expense, and are widely apart from the demands of business pure and simple.

Unwin Spins a Yarn.

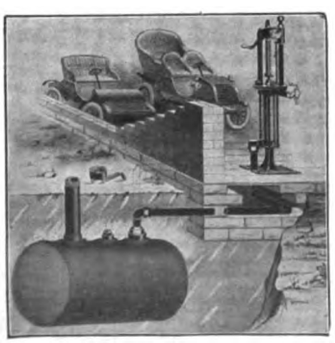
Harry Unwin, the New York manager of the -erce and Olds agency, after reading the Motor World's account of the "Elmore Cocktail" as a fuel for gasolene engines, tried to go it one better with the folowing:

"Last week a friend of mine who is just home from India," said Mr. Unwin, "told me of an incident that happened to him near Calcutta. He was running his Oldsmobile in the country when the gasolene tank ran dry. He thought he was 'done for,' when a young Englishman who had not been there long exclaimed: 'Say, why don't you try some of this native booze? It is the hottest stuff I ever tackled, and I think you will have no trouble to make it explode!'

"My friend tried it," concluded Mr. Unwin, "and it actually worked better than any gasolene he ever used, and after that he always used the native booze."

'Tis a great pity that one Reuben Henty, a stage driver at Cuckfield, England, had not improved his leisure time in learing to be a chauffeur. Foreseeing that ultimately automobiles will replace horses, he came to the conclusion that it would not be long before he would be out of employment and destitute—therefore he hanged himself.

BOWSER GASOLINE STORAGE OUTFITS.



Pump discharges gallons, half gallons and quarts at a stroke.

FROM 7 DOLLARS UP.

The Name of "BOWSER" GUARANTEES QUALITY, DURABILITY, SAFETY and CONVENIENCE.

Our 20 years experience in the Tank business, and in designing Oil Storage Systems, enables us to present a line of Gasoline Storage outfits which will meet the requirements of any automobilist, both as to equipment and price.

OVER A DOZEN DIFFERENT STYLES FROM WHICH TO SELECT, VARYING IN PRICE ACCORDING TO STYLE, CAPACITY, ETC.

If you use, or contemplate using Gasoline, it will pay you to investigate.

A REQUEST FOR CATALOGUE XIV. WILL BRING FULL INFORMATION.

S. F. BOWSER & CO., Inc., - Fort Wayne, Ind.

Eastern Office: 255 Atlantic Ave., Boston, Mass.

200,000 VARIOUS STYLES IN ACTUAL USE.



A medium-priced outfit not of the self-measuring type.

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Continuous Performance Horns.

The shortcomings of the usual standard type of horn which only toots when the bulb is pressed seem to have been realized on both sides of the Atlantic at once, and a comparison of the means of solving the problem adopted here and abroad forms an interesting commentary on American and foreign methods. Here, as exemplified by the almost endless number of "continuous performance" horns exhibited at the several shows, simplicity has evidently been the chief aim of the manufacturer, in some instances a portion of the pressure otherwise wasted in the exhaust being utilized to perform this work, and compressed air, readily controlled by the operator, being called upon in practically all cases.

The extreme opposite of this is to be found in an electric horn shown at the recent Paris Salon by M. Legendre, of Rheims. For its operation it requires, first, a source of current supply, whether battery or generator; second, a transformer; third, a switch, and fourth, a receiver. The transformer is the usual trembler induction coil, the condenser of which is relied upon to lessen the effects of self-induction, likewise as usual. The switch is the usual article and is employed to start and stop the tooting, while an adjustment of the trembler on the coil produces louder or softer strains. The receiver is the ordinary bell of a horn fitted with a vibrator somewhat after the pattern of those used on telephone receivers. The current passing through the induction coil starts the diaphragm of the receiver vibrating at a high speed, according to the adjustment of the trembler, and the sound thus produced is amplified by the bell of the horn. It all sounds very feasible, and both the current supply and one of the coils now essential on a car could be made to do extra duty by blowing the horn in this manner, but delicate adjustments, such as are essential to the proper working of a vibrating diaphragm, are out of place where jolting cannot be avoided.

To Use Motor Buses in Egypt.

The silent Sphinx has had an opportunity to gaze on latter day locomotion as exemplified by the automobile, and now the streets of the ancient cities of the Pharaohs, Alexandria and Cairo, are to resound to the "chug-chugging" of motor 'buses.

The Egyptian Motor Company has been incorporated with a capital of £100,000 for this purpose, and it is stated that twenty vehicles of ample capacity will be placed in service on the streets of both cities. As transportation facilities are utterly lacking it is thought that good dividends will reward the enterprise of the incorporators.

How to Soften Brushes.

To soften paint brushes that have become hard, soak them in raw linseed oil for twenty-four hours, rinse in hot turpentine and repeat the process till clean.

The Use of Rubbing Stones.

New systems and processes of carriage painting come and go, but the application and rubbing or surfacing of rough stuff promises to go on forever.

Formerly in all carriage paint shops the volcanic or natural pumice stone, furnished in all sorts of shapes and conditions, was used for surfacing rough stuff. The chief disadvantage of using the natural pumice stone was found in the brittle, shelly nature of the stone as it became saturated with water. Minute pieces were continually breaking away from the working block, and in the hands of other than experienced workmen the block, rolling over these loosened particles, would mar and disfigure the surface. The natural black pumice stone rarely runs uniform in quality, hard and soft veins alternating throughout many of the blocks, so that, even in the hands of an expert surfacer, the results are not likely to prove uniformly excellent.

However, with the advent of the artificial rubbing stone, or brick, as it is variously called, the difficulties incident to the surfacing of rough stuff largely disappeared; more and better work is accomplished. And in all respects this particular line of work has been facilitated and made easier to do well.

The advantages of the artificial rubbing stone or brick are that it is entirely free from all unclean ingredients, and it can be furnished in any shape and in any degree of hardness or texture of grain.

KOKOMO



THE TIRE THAT WON'T COME OFF



until you take it off, and then only a small wrench is necessary.

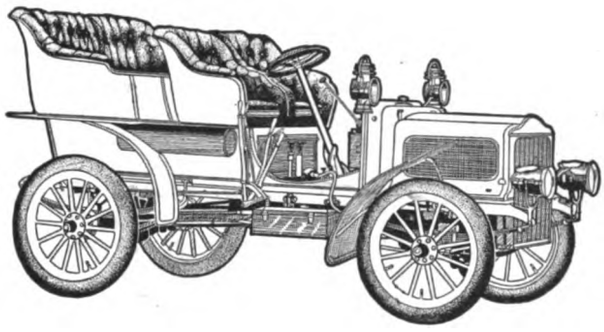
The mechanical fastening shows why it cannot "creep," "crimp," "roll out" or "blow out." The lugs form part of the metal band, which is moulded into the tire itself, and are rigidly held in place by slots in the rim.

KOKOMO RUBBER COMPANY, - - Kokomo, Ind.

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The INCOMPARABLE WHITE

THE CAR FOR SERVICE



Choosing an Automobile

is a difficult proposition if the purchaser relies only on the appearance of the various models of machines as they stand in the salesrooms, and as they perform on short demonstration trips.

When Past Performances are Considered,

selection narrows down to the WHITE—for four years winner in all reliability and endurance contests, as well as in many speed and hill climbs.

Write us for Bulletin No. 8, which summarizes four years of automobile history.

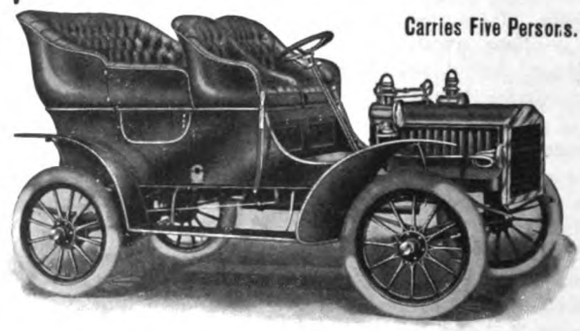
WHITE SEWING MACHINE COMPANY,

CLEVELAND, OHIO.

THE MICHIGAN

MODEL E. $1250.

Carries Five Persons.



The Michigan cars are **SAFE** ones to drive, and this is more than can be said of the majority of cars of about the same price. They are usually provided with one brake, leaving one at the mercy of the reverse (if the engine doesn't stop just at the critical moment) should this one brake give way. This is a **SERIOUS** matter, involving the **SAFETY** and even the **LIVES** of the occupants of the machine.

Michigans are **ALL** supplied with a brake band around the differential, which is sufficient for ordinary use, and with internal expanding brakes, lined with wood fibre, on both rear wheels. Both brakes can be used at the same time, giving **PERFECT CONTROL** of the car under **ALL CONDITIONS**, making the Michigan a **SAFE** car to drive. This is just **ONE** good "Michigan" point. There are lots of 'em.

Our catalog tells about it.

MICHIGAN AUTOMOBILE CO., Ltd., Kalamazoo, Mich.

HEALTH FOR YOU

flows out of the rocks at the various medicinal springs at

FRENH LICK-WEST BADEN SPRINGS

in the highlands of Southern Indiana. This is the season of the year when a brief visit there will restore the normal balance of your system—renew appetite—put you in condition.

Outdoor and Indoor Recreations in Plenty—Golf Playing Now.

Superb Hotel Accommodations.

MONON ROUTE

CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY

Hotel Rates range from $8 to $35 per week, including free use of all the waters.

Booklet telling all about the waters and giving list of Hotels and Boarding Houses, with their rates, sent free.

FRANK H. REED, Gen. Pass. Agt., Chicago.

CHAS. H. ROCKWELL, Traffic Man.

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The Week's Patents.

782,968. Automobile Canopy. William F. Kramer, Dayton, Ohio, assignor to the Wm. F. Kramer Co., Dayton, Ohio. Filed October 14, 1904. Serial No. 228,398.

Claim—1. In a canopy for automobiles, a front canopy having a rear transverse marginal flange projecting downwardly, in combination with a detachable tonneau having a separate canopy with a front transverse marginal flange projecting downwardly and matching with the flange of the front canopy so as to provide a continuous canopy above the entire vehicle when the tonneau is in position, and means for uniting said canopies at the abutting flanges, substantially as set forth.

782,980. Carbureting Apparatus. John N. Moehn, Milwaukee, Wis. Filed January 13, 1904. Serial No. 188,827.

Claim—1. In a carbureting apparatus, the combination of a supply chamber; a generating chamber in communication with the supply chamber; a pipe leading from a source of air supply upwardly in the generating chamber to an elevated point of discharge therein; a tubular covering for said pipe provided with a float near its lower end and movable along the pipe, said covering and float being arranged with an intervening, annular, unobstructed space for the upward passage of gas and said tubular covering being closed at its upper end and open at its lower end; a perforated hood located above the float and connecting the float with the tubular covering; a gas storage chamber; and a pipe leading from the generating chamber to the storage chamber.

782,985. Friction Clutch. Andrew P. Olson, Chicago, Ill. Filed September 25, 1903. Serial No. 174,550.

Claim 1. In a clutch a cylindrical casing and a pair of spreading friction pieces in combination with toggle joint mechanisms in connection with the friction pieces, pinioned screw shafts in connection with the toggle joint mechanisms, and a sliding collar provided with rack bars adapted to work the screw shaft pinions, as specified.

783,020. Lubricating Device. Louis S. Clarke, Haverford, Penn. Filed January 28, 1904. Serial No. 190,989.

Claim—1. A lubricating device comprising a receptacle secured to the crank case of a motor, a tube, the lower end of which terminates at a point above the bottom of the said receptacle, and the other end of which projects upwardly through the top of the said receptacle and is normally closed, a tube passing through the said receptacle, the opposite ends of which are secured respectively in openings provided in the top and bottom of the said receptacle, the lower end of the said last mentioned tube being in communication with the said crank case, and means for closing the said lower end, the upper ends of the said tubes being in communication with each other, and the said closing means being adapted to be opened by the creation of a vaccuum in said crank case.

783,021. Steering and Controlling Mechanism for Vehicles. Louis S. Clarke, Haverford, Penn. Filed January 28, 1904. Serial No. 190,990.

Claim—1. In a steering and controlling mechanism for vehicles, the combination of a supporting tube having supporting brackets secured thereto, a plurality of concentric controlling shafts supported by the said brackets, and a single hand piece connected to the said shafts for operating the same.

783,037. Engine Transmission and Reversing Device. Nels P. J. Herby, Oakland, Cal., assignor to Gretchen Herby, Oakland Cal. Filed December 17, 1903. Serial No. 185,474.

Claim—1. In a device of the character described, the combination of a drive shaft and a driven shaft having relatively fixed bearings, an intermediate shaft having movable bearings, a support including a bell crank lever for said movable bearings and means for locking said lever at desired points, means for supporting said intermediate shaft at a uniform distance from the driven shaft, pulleys on the drive and intermediate shafts, a band connection between the pulleys and means for transmitting motion from the intermediate shaft to the driven shaft.

783,055. Lubricating Device for Vehicle Axles. Philip Le Sueur, Calabasas, Cal. Filed October 28, 1902. Serial No. 178,833.

Claim—1. In combination, an axle, an axle box thereon, the end wall of the axle box having a central hole for the introduction of lubricant, said axle terminating short of the end of the axle box, thereby forming a lubricant chamber at the end of the axle, and a solid bolt detachably engaging the end of the axle, the shank of the bolt traversing the lubricant chamber and passing through the hole in the end of the axle box, the head of the bolt being outside the axle box, the bolt being removable to open the hole and allow hard grease to be put into the chamber, the bolt when in place preventing egress of the lubricant and also holding the axle box on the axle.

783,056. Vehicle Axle. Philip Le Sueur, Calabasas, Cal. Filed October 28, 1903. Serial No. 178,835.

Claim—1. In combination, an axle, an axle box thereon, a hub carried by the axle box, a bearing plate on said hub, the outer end of said axle terminating short of the end of the axle box and being drilled and threaded, a solid retaining bolt passing through said bearing plate on the hub closing the entrance and traversing the chamber formed at the end of the axle for the reception of lubricants, and engaging with the threads in the axle, and a bolt stop between the bolt and the bottom of the hole in the axle.

783,058. Lever Apparatus for Mounting Pneumatic Tires Upon Wheel Rims. André Michelin, Paris, France. Filed December 14, 1904. Serial No. 236,814.

Claim.—1. A lever device for mounting pneumatic tires upon wheel rims, consisting of a lever with a curved and hooked end, adapted to be engaged with one of the edges of the wheel rim, a tumbler lever pivoted to the main lever, adapted to engage with the beaded edge of the cover which has to be brought into position on the tire, and having a tail which is adapted to bear against the under face of the wheel rim, so that, on raising the main lever, the tumbler lever is turned on its axis, so as to bring the beaded edge into position for engaging with the groove of the wheel rim, substantially as described.

783,061. Electric Terminal Clip. David B. Mills, East Orange, N. J. Filed May 3, 1904. Serial No. 206,198.

Claim.—1. An electric terminal clip made out of resilient metal and comprising two flat side portions forming between them an elongated opening, the flat surfaces of said side portions extending away from said opening, said opening having a narrow portion and a slightly larger seat portion, one at least of said side portions being adapted to yield at said narrow portion so as to enlarge the same, whereby a terminal larger than said narrow portion may pass by it

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

FOR SALE—1 Model A 1904 Cadillac; 1 De Dion 9-H. P. Tonneau, cost $2000; bevel, gear drive, $500; 1 Clement runabout, $250; 1 De Dion Motorette, 5-H. P., $250. Above machines all in perfect order. A. ECKEL, cor. Third Ave. and 44th St., Brooklyn.

TO Americans connected with motor car and tool trades—U. S. A. Patent of Dalton Combined Jack, Vice and Drill for sale. Principals or other solicitors only apply. F. DALTON, Dean, Kimbolton. St Neots, England.

FOR SALE—Michigan Automobile, new, regular price $500, for $350; also motorcycles, $75 up. COROL R. BAKER, Salem, Ohio.

FOR SALE—20 H. P. Haynes-Apperson Surrey; '04 Stevens-Duryea; '04 Indian Motorcycle; all in perfect condition, and cheap. A. C. POLLARD, Nashua, N. H.

FOR SALE—Bargain, Running Gear and Body, with or without Tires, suitable for 10 to 16 H. P. engine. Address, Box 347, Erie, Pa.

FOR SALE—A Switchboard, with rheostat, complete for charging electric automobiles. Only used five times. DR. TYRRELL, 1562 Broadway, New York.

WHITE Limousine, used for demonstration during Auto Show. As good as new. Sampson tires. Rushmore headlights, electric inside lights, etc. Seats six. Price $3000. Cost new without extras $3200. PARDEE-ULLMANN CO., 1400 Michigan Ave., Chicago, Ill. Phone, South 557.

FANNING Electric Runabout. New and complete, less batteries. Best offer takes it. List price, complete, $750. Address Drawer D, Albany, N. Y.

CLEMENT-BAYARD 15 H. P. Autocars; 12 H. P. Cadillacs A and B models and Oldsmobiles; all in excellent condition and perfect running order at exceptionally low prices, to make room for the new stock. MOTOR CAR CO. OF NEW JERSEY, 291 Halsey St., Newark, N. J.

STEVENS-DURYEA, with top, used one season, $725; 1903 Olds, $300; 1904 Cadillacs, $490 up; Renault Touring Car, excellent condition. $750; XLIII Columbia, used 400 miles, $1,250; best bargains in West. Write MORIARTY CO., Kansas City, Mo.

WRITE to us for big bargain list. We move them quick at prices as low as any in the U. S. considering they are in good condition. New 1904 model "A" Cadillac tonneau having third seat, full brass rails, mud boot, lamps and horn complete, lists $900, never sold, used by proprietor three months, powerful and perfect throughout. $600; runabout in same, $550; 1903 Cadillac runabout, $400; 1903 Oldsmobile artillery wheels, perfect condition, $250; 1904 Oldsmobile with top, hub brakes, chain boot, all complete, revarnished, tires and all perfect, cost $700, sell for $400, MICHIGAN AUTOMOBILE CO., Grand Rapids, Mich.

FOR SALE OR FOR RENT.

We have for sale or we will lease to proper parties a thoroughly equipped machine shop suitable for the manufacture of Rear and Front Axles and Automobile parts of all kinds, It is now running and has orders enough ahead to keep it busy for two to three months—an excellent opportunity for any one with money to get into a good business immediately. Address MACHINE SHOP, care of THE MOTOR WORLD.

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into said seat and be there retained by said narrow portion.

783,095. Vehicle Wheel. Charley R. Bohannon, Welsh, La. Filed August 31, 1904. Serial No. 222,859.

Claim.—1. In wheel structure, in combination, a hub comprising a shell, an axle box within said shell, lugs projected radially from the axle box, means for preventing displacement of the axle box from the shell, a rim, spokes attached to the rim at their outer ends and having their inner ends received by the shell of the hub, and nuts securing the inner ends of the spokes to the shell and co-operating with the lugs of the axle box.

783,104. Speed Regulator for Explosive Engines. Charles R. Daellenbach, Ellwood City, Penn., assignor to Daellenbach Gas Engine Company, Pittsburg, Penn. Filed December 16, 1903. Serial No. 184,427.

Claim.—1. In an explosive engine, the combination of an explosion chamber, a piston movable therein, a crank shaft connected with the piston and bearing an eccentric, a valve for controlling the supply of explosive mixture to the explosion chamber; said valve being adapted to normally assume and rest in an open position, and having an arm provided with a lateral projection, a rod having a strap receiving the eccentric on the crank shaft, and also having means for receiving and guiding it on the projection of the valve arm, and means for automatically effecting connection between the said rod and the projection on the valve arm and moving said arm when the engine attains an excessively high rate of speed.

783,105. Valve Gear for Explosive Engines. Charles R. Daellenbach and Arthur G. Daellenbach, Park Gate, Penn., assignors to Daellenbach Engine Company, Pittsburg, Penn. Filed December 16, 1903. Serial No. 185,375.

Claim.—1. In an explosive engine, the combination of a working cylinder, a working piston therein, a valve chamber having an exhaust port, and an explosive inlet port, a valve operated from the working piston for controlling communication between the working cylinder and the valve chamber, a piston or other suitable valve arranged in the valve chamber, to control the exhaust port and the explosive inlet port, means for holding the said valve in one position, means for releasing said valve, and means for moving it, independent of the first mentioned valve, subsequent to its release.

783,106. Explosive Engine. Arthur G. Daellenbach and Charles R. Daellenbach, Park Gate, Penn., assignors to Daellenbach Gas Engine Company, Pittsburg, Penn. Filed December 16, 1903. Serial No. 185,376.

Claim.—1. The combination in an explosive engine of outer cylinders and an intermediate cylinder open at one end, pistons serving in conjunction arranged between and connected with the explosion chamber of the intermediate cylinder and the explosion chambers of the outer cylinders, valves controlling communication between the outer cylinders and the intermediate cylinder and arranged to set toward the outer cylinders, a connection between the pistons whereby they are caused to move together, exhaust ports communicating with the explosion chambers of the outer cylinders, means for controlling said exhaust ports, and means whereby said explosion chambers of the outer cylinders may be supplied with explosive mixture.

783,114. Horseless Vehicle. Paul Flucks, St. Louis, Mo. Filed August 12, 1904. Serial No. 220,544.

Claim.—1. In a horseless carriage, a suitable carriage body, a reservoir mounted in connection with the same, a motor comprising a stationary section of cylinder mounted on the carriage body adjacent to the wheel thereof, a rotary piston carrying blades coupled to the wheel, a valve casing carried by the stationary section, feed pipes leading from the reservoir to the valve casing, a rotary valve mounted in the casing and capable of operation from without, a series of injection pipes leading from the casing through the periphal wall of the stationary section and having their discharge ends directed against the blades toward the axis of the wheel, and suitable ports formed in the valve for controlling the fluid, substantially as set forth.

YOU ought to have an air governed carburetter. It is the latest and best improvement on this year's automobiles. We make an Automatic Air Governor that can be easily attached to your old carburetter, making it as good as the 1905 models. Three sizes. $2.50 and $3.00.

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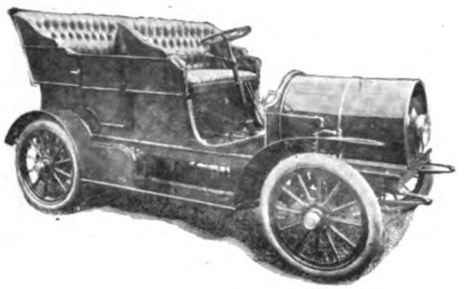
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The 1904 edition is now out of print.

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Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

236

Automobiles were exhibited at the Chicago Automobile Show.

30

were equipped with Solid Tires.

22 OF THE 30

were equipped with

FIRESTONE SIDE-WIRE TIRES.

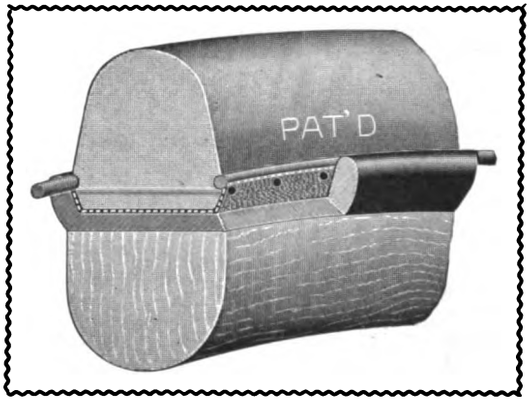
16 OF THE 30

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These statistics show the rapid growth into popularity of

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for pleasure as well as Commercial Automobiles.



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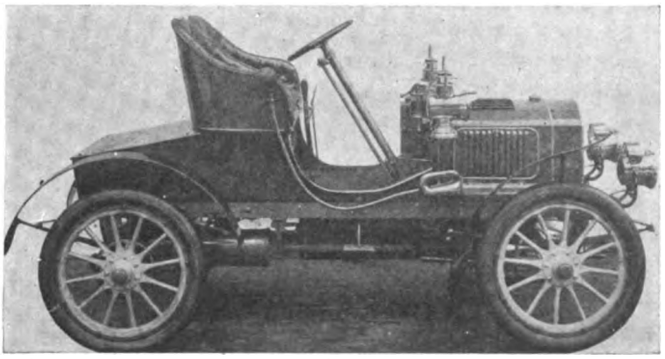
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Complete as illustrated. 3 Speed Sliding Transmission.

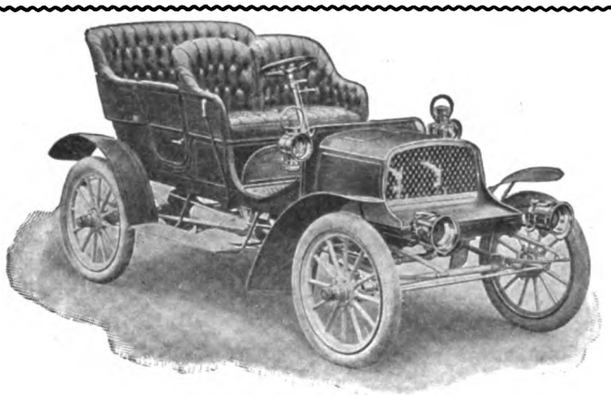
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16 H. P. 2 Cylinder Vertical Engine, 3 Speeds Forward and Reverse, Ball Bearing Sliding Gear Transmission, Bevel Gear Drive, Automatic Carburetter, Weight, 117 Pounds,

and the prettiest designed little car ever built.

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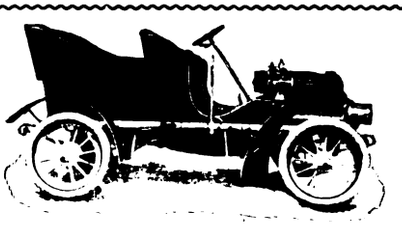
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We predict with certainty and confidence that if your investigation is thorough your answer will be, "No; there is not."

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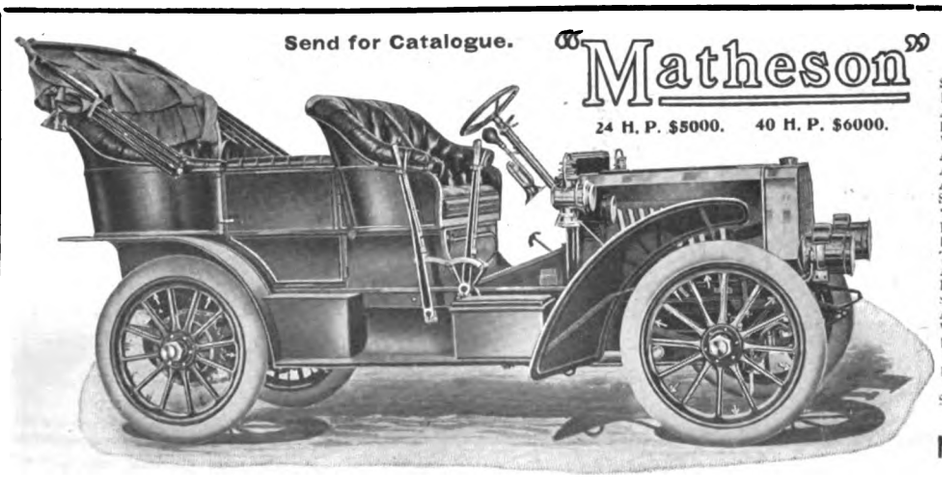
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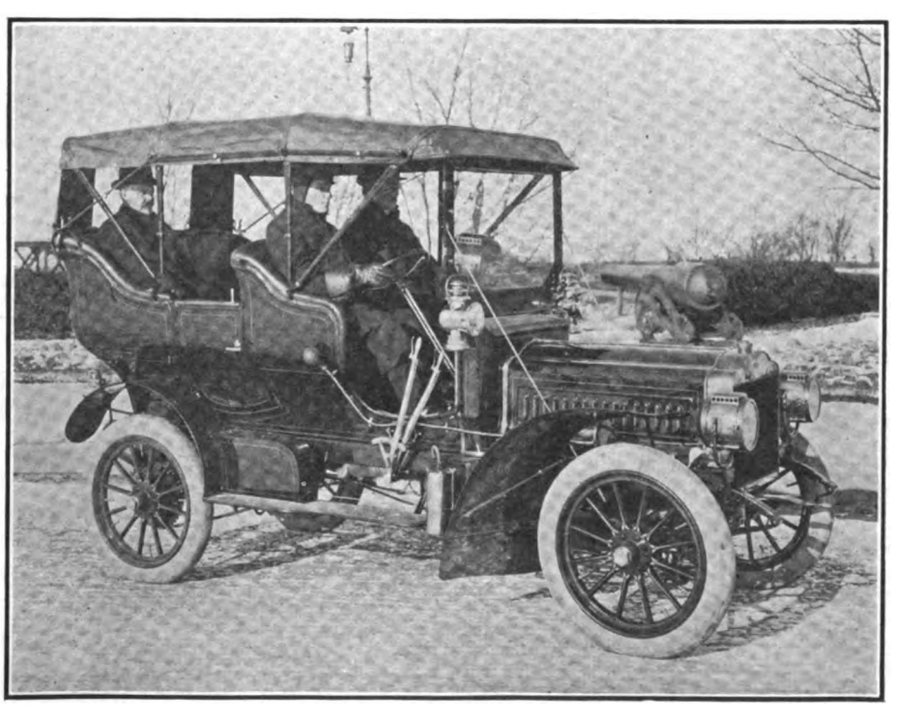
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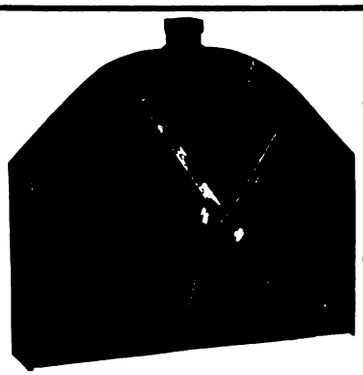
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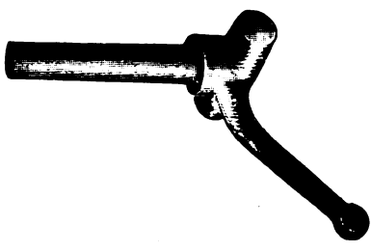
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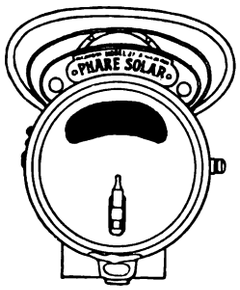


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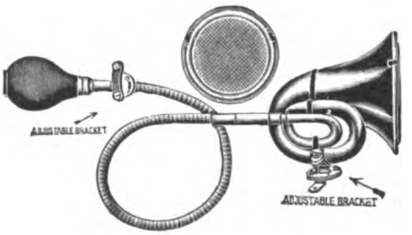
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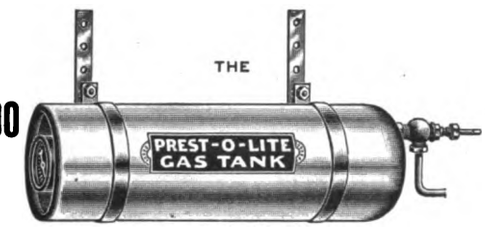
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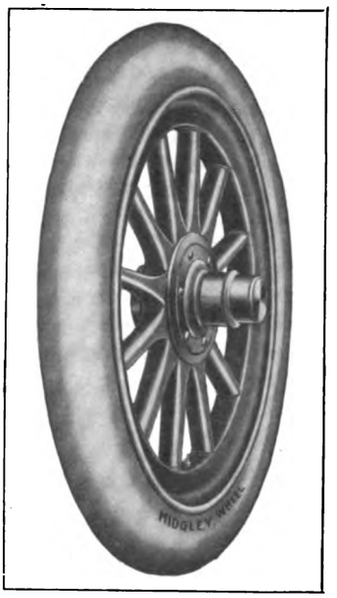
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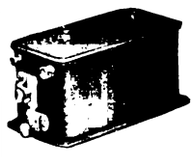
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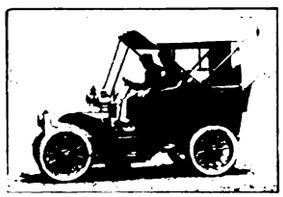
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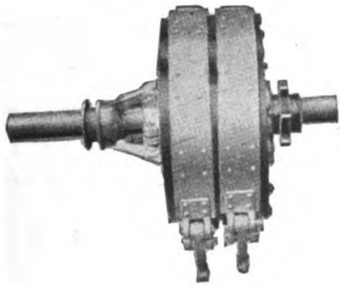
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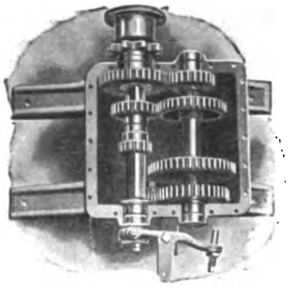
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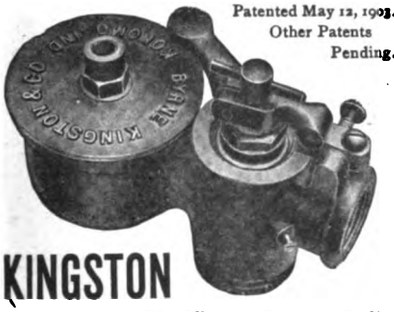
SYRACUSE GEAR CO., - Syracuse, N. Y.



Kingston Carburetor.

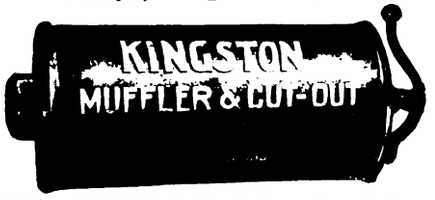
OVER 25,000 IN USE.

Patented May 12, 1903.
Other Patents Pending.



KINGSTON

Carburetors, Mufflers, Spark-Coils, Spark-Plugs, Steering Wheels, Pumps, Oiling Devices, etc.



BYRNE, KINGSTON & CO., Kokomo, Ind., U. S. A.

Pat. Jan. 29, 1901.



An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.
THE ADAMS COMPANY, Dubuque, Iowa.

DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 88 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is located in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

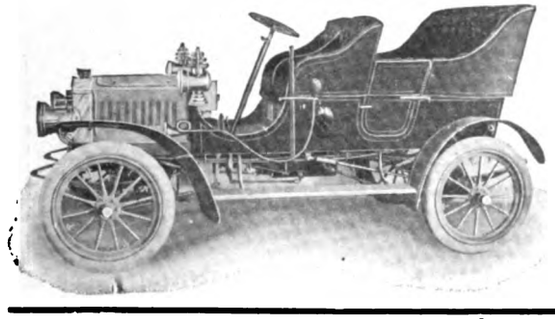
The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

GRAY AND DAVIS

"Makers of Smart Automobile Lamps."

Be Sure YOUR CAR is Equipped With Them. AMESBURY, MASS.



PIERCE-RACINE

4 MODELS

$750. $850. $1,100. $1,250.

PIERCE-RACINE Cars are good cars. *Guaranteed* for one year. They are fast and great hill climbers. Let us send you our printed matter which tells all about them. They are the best for the price.

PIERCE ENGINE CO., 1300 Clark St., Racine, Wis.



Yankee Cut-Out Switch.

Price $1.50.

Switch-blade may be instantly cut out, locking your car in your absence. Also doubles your amperage at will.

Everything for the Automobile
Mammoth Catalog mailed for ten cents.

E. J. WILLIS CO., 112 Park Place, N. Y.

Jones Speedometer-Odometer.

An accurate speed and distance indicator, correctly designed and perfectly constructed

The "Speedometer," A bulletin on speed, sent free anywhere. | TRADE *SPEEDOMETER* MARK

Jones Speedometer, 125 W. 32d St., New York



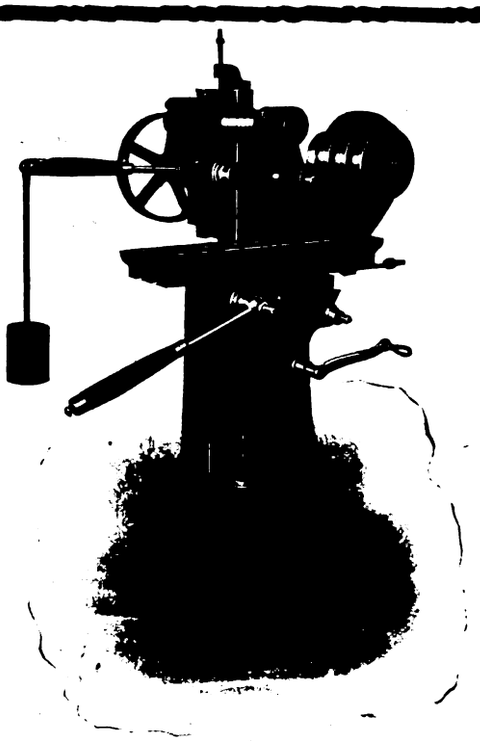
ROBERT VOLT-AMMETER

Guaranteed.

3 VOLTS 30 AMPS. | $6.00 Incl. Case. | SEND FOR CATALOG

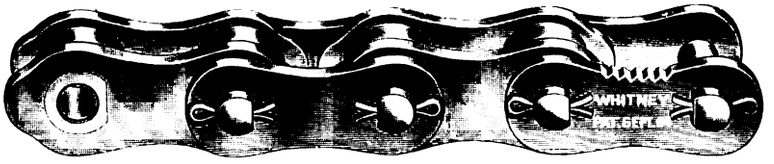
THE ROBERT INSTRUMENT CO.
Cor. Larned and Shelby Sts., Detroit, Mich.

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Why is this **"WHITNEY" HAND (FEED) MILLING MACHINE** used in preference to all others by U. S. Government, Western Electric Co., Underwood Typewriter Co., Smith & Wesson, leading Automobile Manufacturers, etc., etc.? Possibly it is because we make more of a specialty of Hand Millers than any other company in the world, and give our customers greater return for their investment by way of quality, quantity, range and efficiency.

These are "WHITNEY" STANDARDS for Roller Chains.



PITCH.	Diameter of Roll.
1 in.	5/8 in.
1¼ in.	¾ in.
1½ in.	⅞ in.
1¾ in.	1 in.
2 in.	1⅛ in.

The PITCH SIZES and DIAMETERS advance uniformly in perfect proportion. They have broken all records for efficiency, and have been adopted for most of the leading American Cars, including

"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "BRAMWELL" "CADILLAC" "COLUMBIA" "CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN" "GROUT" "GAETH" "GIBBS" "HARTFORD MOTOR STREET SWEEPER" "KNOX" "LENAWEE" "MITCHELL" "MOLINE" "MATHESON" "MANHATTAN" "OLDS" "POPE-HARTFORD" "PIERCE-RACINE" "PRESCOTT" "QUEEN" "RAMBLER" "STEARNS" "SOMMER" "SNELL" "THOMAS 50 & 60 H. P." "TOURIST" "WAYNE" "WESTERN ELECTRIC"

PITCH.	Diameter of Roll.
1 in.	9-16 in.
1¼ in.	5/8 in.
1½ in.	¾ in.
1¾ in.	1 in.
2 in	1⅛ in.

These are the OLD or COMPETING Standards.

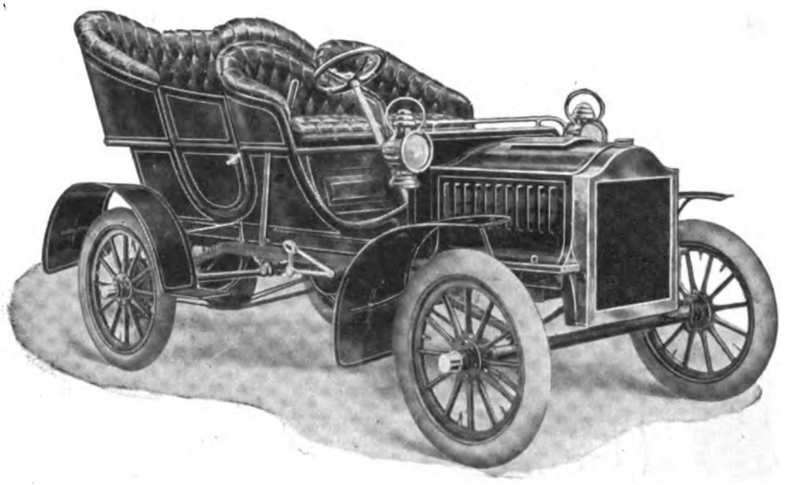
The PITCH SIZES advance uniformly, but the DIAMETERS are irregular and not in perfect proportion.

All chain manufacturers have adopted "Whitney" Standards for the new sizes 1 3-4 in. and 2 in. Pitch.

THE WHITNEY MFG. CO.,
HARTFORD, CONN.

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OLDSMOBILE



Look the field over and find its equal—if you can. This Touring Car gives you more for $1400.00 than you can get in any other car under $2500.00. It gives you 20 H. P.— enough to make easy work of the heaviest load you will want to carry—enough to make you feel easy in tackling the steepest hill you will encounter. It has a double-cylinder motor—it has efficiency without complication. It has style and quality—it is the product of the most careful, skilled workmanship—the product of the policy that only the best material obtainable is good enough for an Oldsmobile.

When you have made a careful comparison of this car with other cars you will understand why the Oldsmobile is the greatest selling proposition on the market today—why it was the only light car to be awarded a Gold Medal at the St. Louis Exposition.

If you are interested in further details we will be pleased to send them. Address Dept. 19,

OLDS MOTOR WORKS,

1332 Jefferson Avenue, Detroit, U. S. A.

Member Association of Licensed Automobile Manufacturers.

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APPERSON



30—40—50 HORSE POWER FOUR CYLINDER CARS.

TWELVE YEARS OF ACTUAL EXPERIENCE IN BUILDING GASOLINE CARS.

Our Four Cylinder Cars have been tested for three years, and we offer no long list of excuses called improvements.

Our cars have always run well, and our customers are pleased.

WRITE FOR OUR LARGE CATALOGUE.

APPERSON BROS. AUTOMOBILE CO., Kokomo, Ind.

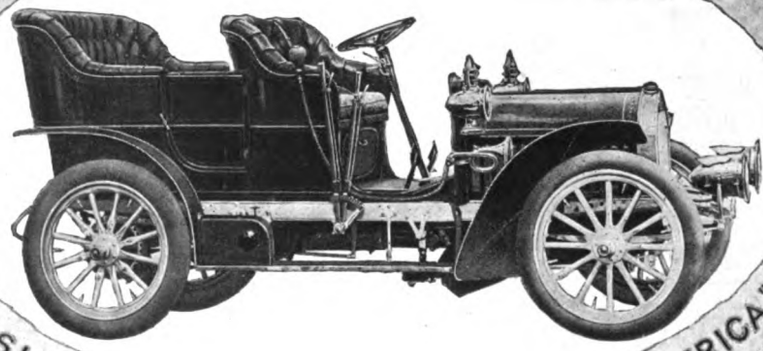
Branches: 66 W. 43d Street, New York; 43 Columbus Avenue, Boston; 394 Wabash Avenue, Chicago.

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Locomobile.



"EASILY THE BEST BUILT CAR IN AMERICA"

Locomobile Gasolene Cars

are not only equal in all respects to the best foreign cars, but are a **great deal better for American roads.** There are many reasons for the superiority of LOCOMOBILE CARS, but little room here to state them. What we want you to do is to send for our catalogue. It is not a rambling mass of generalizations, but a book of facts and figures. Our catalogue tells you **why** the LOCOMOBILE is better than any other car in the world. Mailed free.

1905 MODELS. ALL 4-CYLINDER SIDE-ENTRANCE CARS.

15-20 H. P. Price, $2,800
Weight, 1,800 lbs.
Make-and-break ignition. Pressed steel frame.

20-25 H. P. Price, $3,700
Weight, 2,300 lbs.
Jump spark ignition.
Channel steel frame.

30-35 H. P. Price, $5,000
Weight, 2,700 lbs.
Make-and-break ignition. Pressed steel frame.

40-45 H. P. Price, $7,500
Weight, 3,000 lbs.
Make-and-break ignition. Pressed steel frame.

THE Locomobile COMPANY OF AMERICA, BRIDGEPORT, CONN.

New York, Broadway and 76th St.
Philadelphia, 249 N. Broad St.

Member Association of Licensed Automobile Manufacturers.

Boston, 15 Berkeley St.
Chicago, 1354 Michigan Ave.

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DUQUESNE

"HALF OF THIRTY-FIVE."



The First Men of the country wound their watches with a key until a few years ago.

The Most Dignified professional and business men of today make spectacles of themselves in the public streets cranking their motors!

The Key-Winding Watch is now a relic of the primitive days of watch making.

The Starting Crank is just as primitive—it's a wonder it has been tolerated so long!

The DUQUESNE Starting Device by which the motor is started from the seat every time—a lady or ten year old boy can perform the operation with ease and absolute safety—is to the automobile what the stem-winding device was to the watch—revolutionizes the making of them—enhances the pleasure of using them.

Want to know more about it? Write.

* * * *

In Brief—4 cylinder, air-cooled, 16-21 H.P. vertical engine tandem in front, 5 passengers (generously), 4—40 miles, at the sensational price—

"HALF OF THIRTY-FIVE."

Duquesne Construction Co.,

Manufacturers, JAMESTOWN, N. Y.

POPE-HARTFORD AND POPE-TRIBUNE AUTOMOBILES

represent the best efforts of high-class automobile engineering. They are cars not only graceful and of fine appearance, but possess simplicity, strength and durability. Every minute detail has been carefully studied to give the greatest comfort and satisfaction. Power and speed are suggested in every line and each performance amply bears out the impression.

Pope-Tribune Model IV

is the result of our effort to produce a light touring car of high quality and power. Graceful design, staunch construction, powerful two-cylinder opposed engine, bevel gear drive, three speeds forward, one reverse, together with the moderate price, make this car the happy combination of good things so long desired. **$900.**

Pope-Hartford Model D

with its simplicity of construction and remarkable accessibility for adjustment, stands out pre-eminently as the ideal car for one who has neither the time nor inclination to bother with complicated machinery. The car seats five, having divided front seat and roomy tonneau with an abundance of carrying space. Everything in finish and equipment bespeaks luxurious comfort. Two-cylinder horizontal opposed engine develops 16 h. p. **$1,600**



Pope-Hartford Model D, $1,600.

Complete catalogues mailed on request.

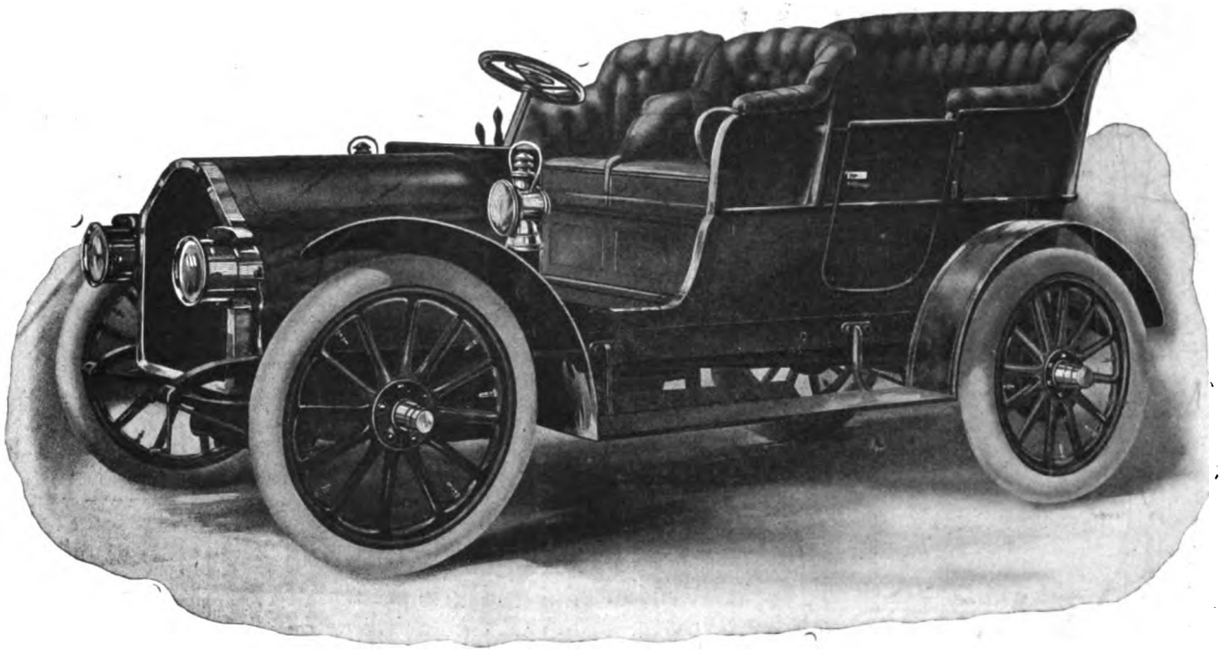
Pope Manufacturing Co.

Hartford, Conn. Dept. A.

Members Association Licensed Automobile Manufacturers.

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WE HELP YOU SELL.



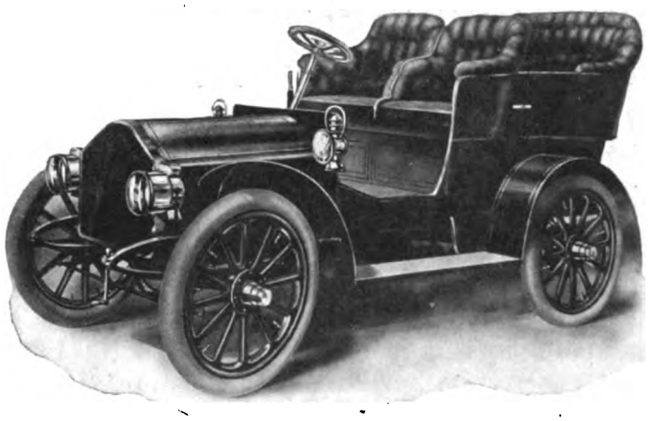
ORIENT MODEL DE LUXE TOURING CAR. 20 H. P. Price $2250.

Our interest in a dealer does not end with selling him a certain number of Orient motor-cars.

Nor do we simply back him up with some magazine advertising, a bunch of catalogues, a few circulars in assorted lots, and let it go at that.

We have contracted for the exclusive use of the greatest automobile selling plan ever invented, and at our own expense we will carry out this plan for the benefit of every dealer handling the Orient line.

The meat of our proposition is to make it possible for every Orient dealer to sell more motor-cars than he could possibly sell without us.



ORIENT MODEL F LIGHT TOURING CAR, with Tonneau. 16 H. P. Price $1650.

We will actually send ninety-odd per cent. of the possible buyers in your territory right into your garage ready to talk business with you, if you sell Orients. Considering that there is nothing in their class that even approaches these Waltham-made, 4-cylinder, positive air-cooled cars, it is not remarkable that we have already closed with the strongest list of dealers selling any one line of cars in America, and have been obliged to double our capacity.

Details of this selling plan will not be published—but if your territory is still open they will be given you on request. Ask for the Orient Style Book, too.

ORIENT TOURING CARS

Model E, Touring Runabout (semi-racing body), 16 H.-P..	$1500
Model E, with detachable Tonneau, 16 H. P.	1650
Model F, Light Touring Car, with Tonneau, 16 H.-P.	1650
Model G, Touring Car, 20 H.-P.	2000
Model de Luxe, Touring Car, 20 H.-P.	2250

ORIENT BUCKBOARD LINE

Buckboard, Model A, 4 H.-P.	$375
Surrey, Model B, 4 H.-P.	450
Runabout, Model C, 4 H.-P.	475
Tonneau, Model D, 4 H.-P.	525

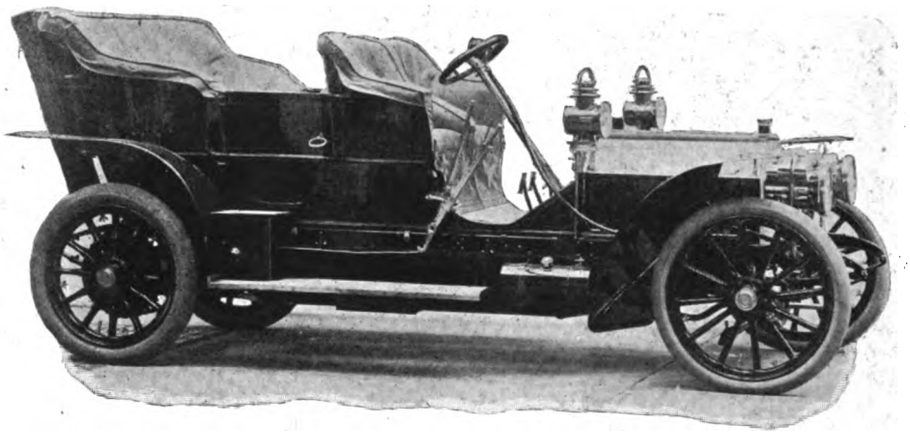
WALTHAM MANUFACTURING COMPANY,

Members of Association of Licensed Automobile Manufacturers.

Factory: WALTHAM, MASS. **General Sales Offices: 44 Broad St., NEW YORK.**

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MERCEDES 1905 MODELS WILL BE EXHIBITED AT BOSTON SHOWS.



MR. ALLEN will be in attendance, stopping at Touraine Hotel.

Orders may be placed with us at **69 Wall Street, New York,** or with **SMITH & MABLEY, the Mercedes Showrooms, 38th Street and Seventh Avenue.**

ALLEN, HALLE & CO., American Representatives of C. L. CHARLEY, Paris.

Two Impulses with Every Revolution

THE ONLY SELF STARTING DOUBLE CYLINDER CAR IN THE WORLD.

This is the famous Elmore Pathfinder, which has demonstrated beyond a doubt the superiority of the two-cycle engine over the four-cycle engine. The most significant feature of the American Automobile situation to-day is the complete triumph of this impulse-every-revolution idea, or, with two cylinders, two impulses every revolution, as exemplified in the Elmore. That the Elmore does produce a constant torque; that it does utlize every particle of power and put a stop to waste energy; that it will take the steepest hill or roughest road at high speed, and that it has the most reliable self-starting engine in the world—for each and every one of these claims overwhelming proof has been produced.

The whole trend of expert and popular opinion is rapidly being directed toward the two-cycle engine.

You owe it to yourself to see this car, which will astonish you, not only by its fine appearance, but by its excess power and its extraordinary control on the high speed.

Send for our full line of literature, the booklet illustrating the 6,000-mile trip, our catalogue, explanation of our engine, and the opinions of people who have used our cars, all sent free, or, if you wish, we will send a 10x12 photograph of the Pathfinder on receipt of 10 cents in stamps.

ELMORE MANUFACTURING COMPANY,

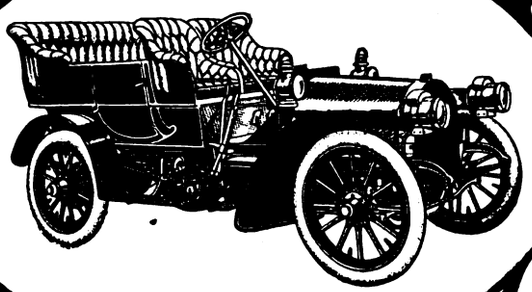
1104 Amanda Street, CLYDE, OHIO.

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Peerless

The Car of Achievement



Peerless Radiators

are made up of single flanged copper tubes set vertically between a header on top and a tank underneath.

RESULT IS

they are not liable to become leaky—are easy to repair in case of accident—can be quickly and perfectly drained to prevent freezing in winter.

1905 PRICES

24 H.P.	30 H.P.	35 H.P.	60 H.P.
$3,200	$3,750	$4,000	$6,000

Send for Catalogue now ready.

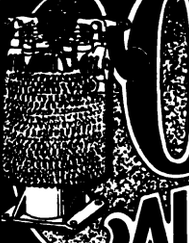
PEERLESS MOTOR CAR CO.

CLEVELAND, OHIO.

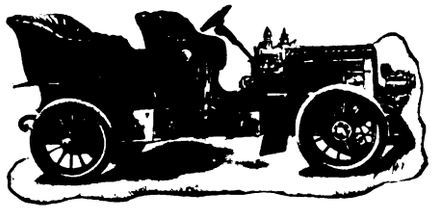
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L. S. & B. Co. Cleve'd.

CORBIN AIR COOLED



Motor Cars



Represent the acme of engineering skill and the ideal of elegance of the coach builders' art. In the Corbin motors, the principle of air cooling is applied to four vertical cylinders, running lengthwise with the frame. They show an amount of efficiency equal to the best of water-cooled motors, and an absence of complication which is refreshing alike to the expert and novice.

All Corbin cars are air cooled by the patented Corbin system. As the motor car of to-day represents an advancement in the art compared with the motor cars of five years ago, so is the Corbin system to all other methods of air cooling cylinders.

TWO MODELS

16-20 H. P. 24-30 H. P.

Both having four-cylinder, vertical motors.

Our Catalog tells how and why.

CORBIN MOTOR VEHICLE CORPORATION,

Chestnut Street,

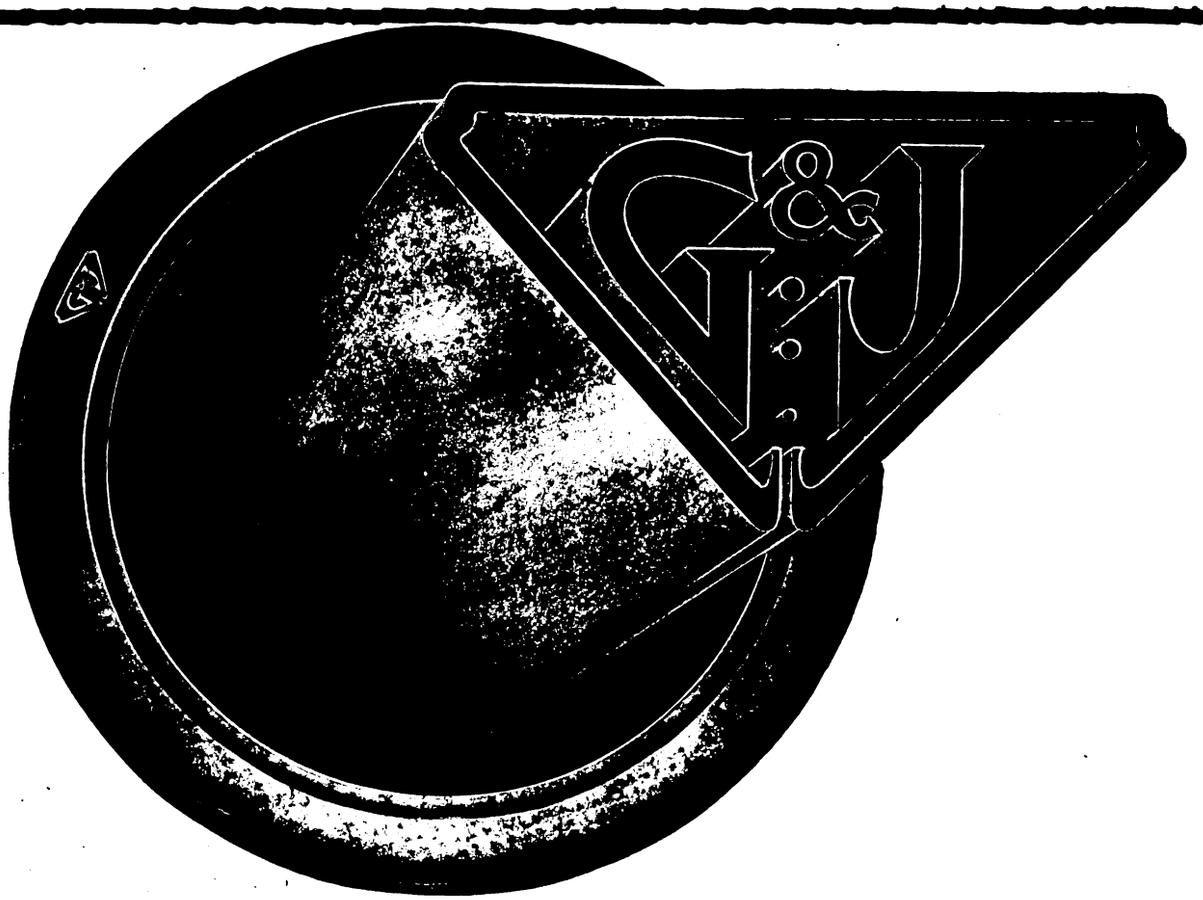
NEW BRITAIN, CONN.

SEE OUR EXHIBIT AT BOSTON SHOW.

NEW YORK AGENCY, 4 West 38th St.

BOSTON AGENCY, 163 Columbus Ave.

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No Lugs Required with G&J Thread Fabric Tires

Our special clincher construction, giving uniform leverage at all points, holds the clincher securely in place.
The flap provides a smooth seating for the inner tube, and removes the possibility of pinched tubes.
The thread fabric construction prevents the heating of the tires in action, hence they are not self-destroying. It also makes the tire so pliable that anyone can easily place it on and remove it from the rim

ISN'T THIS THE TIRE YOU WANT?

Most Durable, No Edge Cutting, No Pinched Tubes,
No Troublesome Lugs. Easiest in the World to Handle.

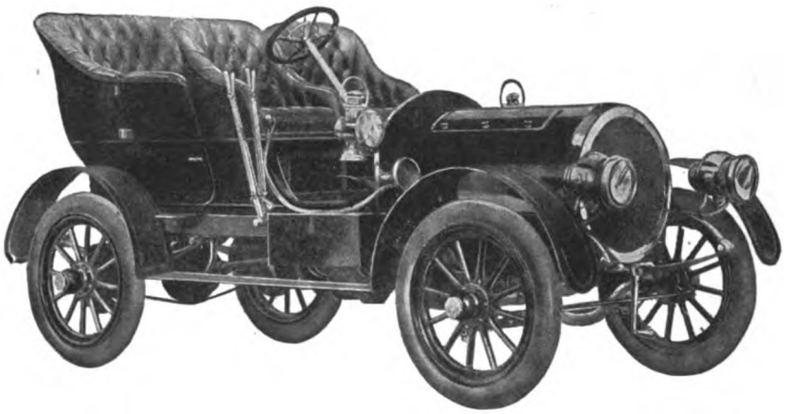
G&J TIRE CO.

Indianapolis
549-625 E. Georgia St.

CHICAGO, 429 Wabash Ave. **DETROIT, 247 Jefferson Ave.**
CLEVELAND, 337 Huron St. **BOSTON, 43 Columbus Ave.**

Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded

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NATIONAL, MODEL C, PRICE, $2,500.

NATIONAL

Model "C"

"GOES THE ROUTE."

With NATIONALS You Lead—
Others Follow.

Side entrances to detachable tonneau.
Divided front seats. Five passengers.
New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
Five lamps, Generator and horn.
Tires, 34 x 4. Positive oiling.
Luxuriously upholstered in leather.
Governor. Duplex throttle control.
Four cylinder 4¼ - 5 vertical.
Bevel gear drive.

Double ball bearing slide gear transmission—direct on high.
Hardened steel gears.
Gear driven commutator.
Rear wheels revolve on double ball bearings on outside axle tube.
All weight taken off inner axle and differential.
Spherical drive case.
Internal expanding metal to metal brakes.
Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905.

National Motor Vehicle Co.,

1007 E. Twenty-Second St., Indianapolis, Ind.

WRITE NOW.

DISTRIBUTORS.

New York: Homan & Shulz Co., Broadway and 38th St.
Chicago: Hayden Automobile Co., 1337 Michigan Ave.
St. Louis: Westminster Automobile Co., 4290 Olive St.
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THE BAKER ELECTRIC

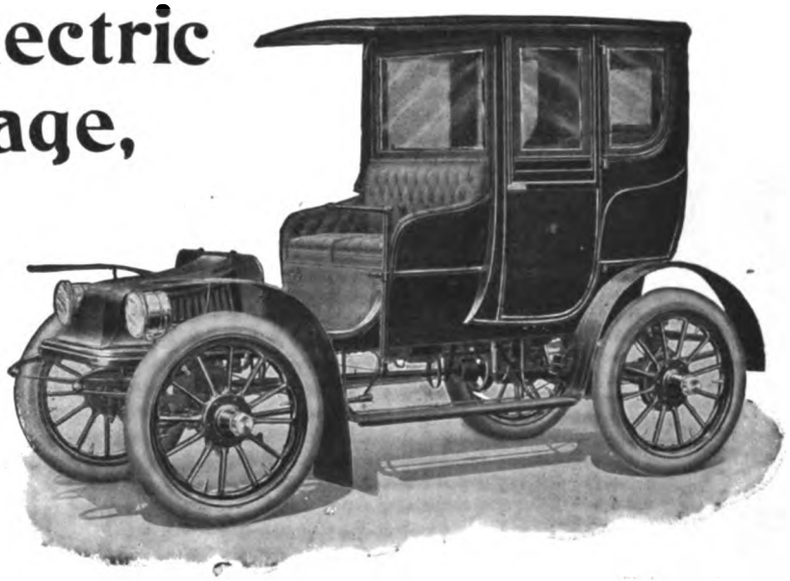
The Baker Electric Depot Carriage,

The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES,
SURREYS, ETC., ETC.

WE ARE READY TO TALK BUSINESS.

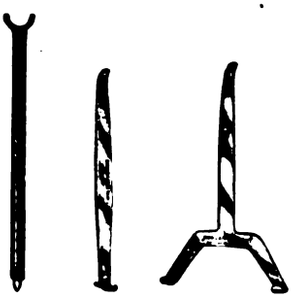


THE BAKER MOTOR VEHICLE COMPANY, CLEVELAND, OHIO.

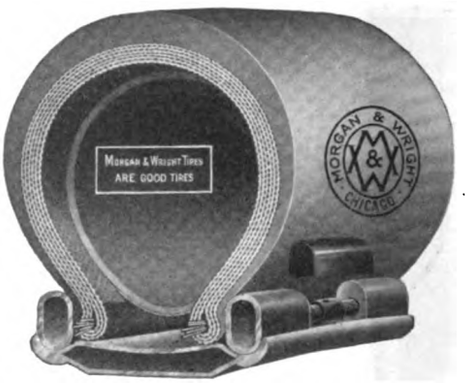
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Clincher Tire with Tire Tools





Perfected Dunlop Detachable



It is well worth any man's time to investigate the quality and serviceableness of Morgan & Wright tires —Clincher or Dunlop.

These tires do not stand up day in and day out, under all sorts of conditions, without there being a "good and sufficient" reason:

That reason lies in superior construction, material and know how.

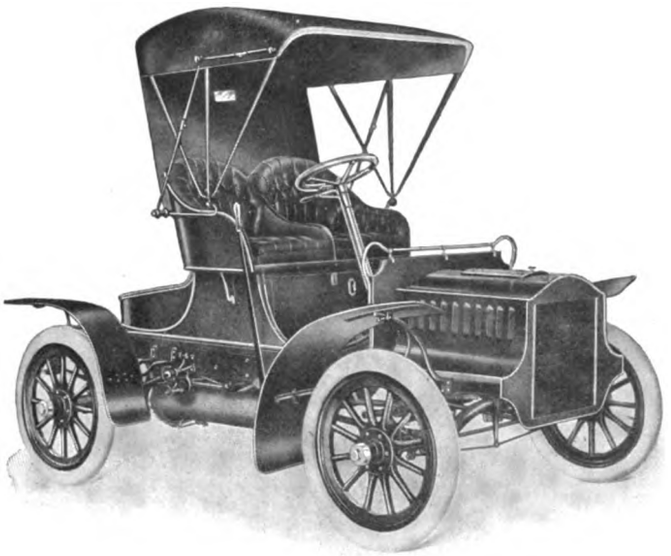
Investigate!

Ask for a copy of "The Other Fellow's Opinion."

Morgan & Wright, Chicago

NEW YORK PHILADELPHIA DAYTON ST. LOUIS BOSTON
DETROIT ATLANTA SAN FRANCISCO SYRACUSE
CLEVELAND MINNEAPOLIS LOS ANGELES

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"Doctor's Delight"

This little car is specially designed and equipped for the use of physicians and business men to whom time is money. It is a practical car 365 days in the year—built to go in all kinds of weather—and does it. Style shown is our

Model E Cadillac,

with top which can be easily raised or lowered as desired. The standard gear in this car is comparatively low for so light a machine with so powerful an engine. When desired for use where the roads are good and comparatively level, we advise a 10-34 gear combination. On very hilly and sandy roads, where 18 or 20 miles per hour would be the limit, a 10-41 gear will be found most satisfactory. This car embodies all the good features peculiar to Cadillac construction, and is a first class vehicle in every respect. It is of 9 h. p., and the **Price** is **$800** Send for 1905 Catalog, which gives complete specifications and tells all about it.

Cadillac Automobile Company, - DETROIT, MICH.

Member of Association of Licensed Automobile Manufacturers.

"The Maxwell"

There is not one complicated detail throughout "Maxwell" construction. The number of parts has been cut down to a minimum, and each part has been treated as a special problem and carefully worked out to perfection. It is fundamentally a car easy to explain, easy to understand and easy to operate.

The owner of a "Maxwell" is absolutely sure of two things.

First, that no car in the market AT ANY PRICE is more reliable than his, and, second, that he owns the one car before the public to-day in which, through its rare simplicity of construction, there is nothing to do but ride.

The "MAXWELL" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and accessible in every part. They have Bevel Gear Drive. METAL BODIES. Transmission Case and Crank Shaft cast in one Aluminum casting. "Perfectly simple and simply perfect."

16 H. P. TOURING CAR, $1400. **8 H. P. TOURABOUT, $750.**

MAXWELL-BRISCOE MOTOR CO.

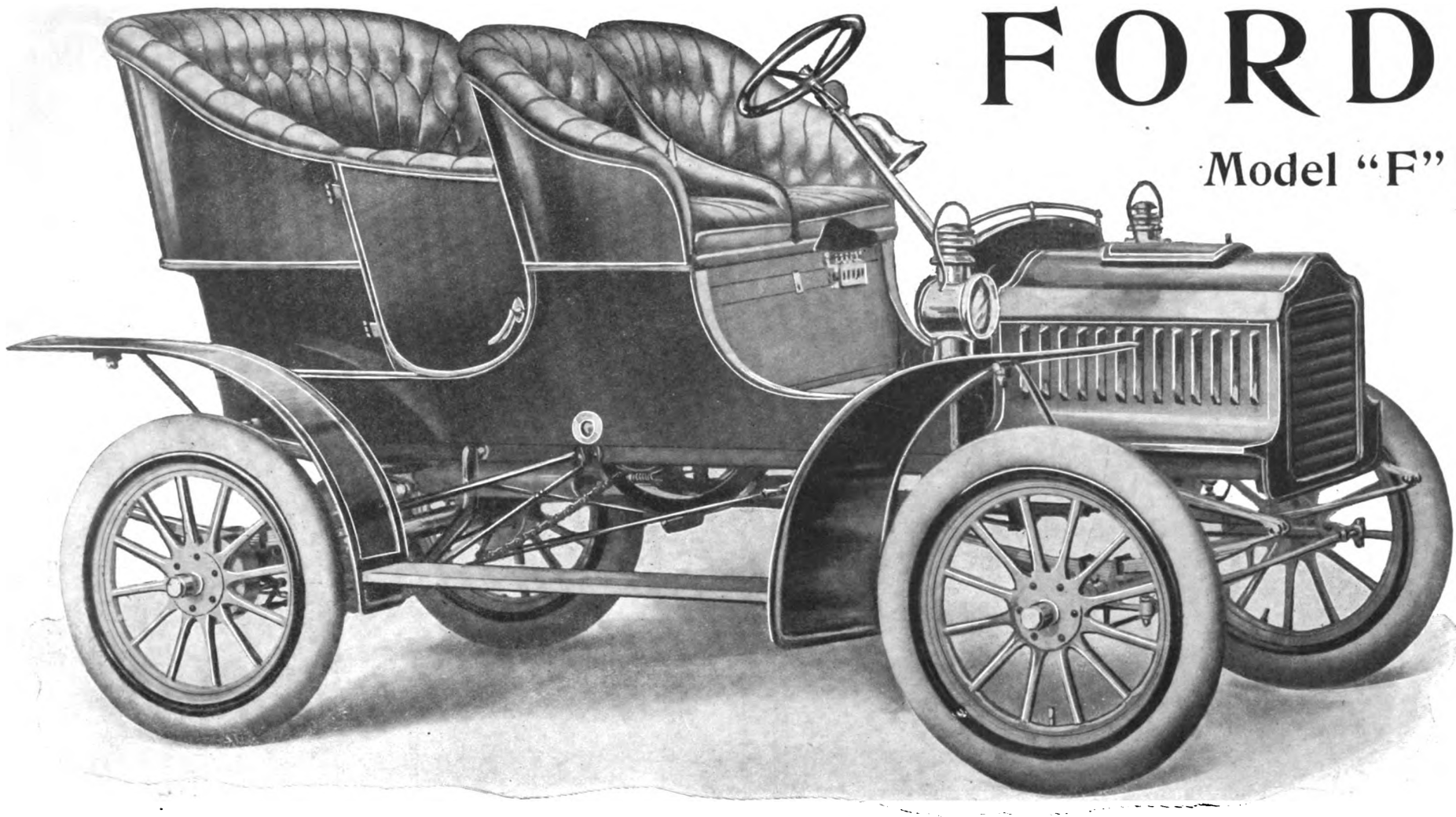
TARRYTOWN, N. Y.

New York City Salesroom, 317 W. 59th Street.

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FORD

Model "F"



THE FORD IS FOREMOST among automobiles by reason of the seasoned principles and mature experience which stand behind each car. MODEL F is the most advanced type of automobile construction—a handsome side-entrance car, weight 1400 lbs., with ample power furnished by its matchless 2-cylinder motor.

PRICE, $1200.

1905 catalog now ready. Write for it today.

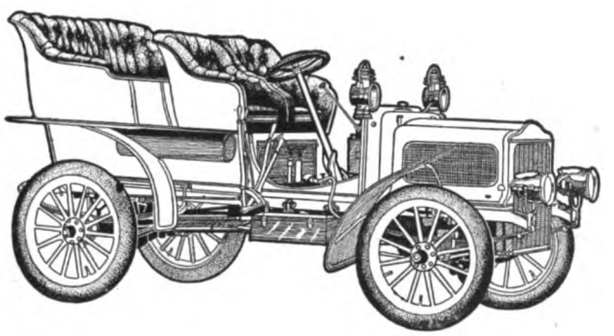
FORD MOTOR CO., = Detroit, U. S. A.

Canadian Trade Supplied by FORD MOTOR CO. OF CANADA, Ltd., Walkerville. Ont

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The INCOMPARABLE WHITE

THE CAR FOR SERVICE



White Reliability is Proverbial.

Every contest where this quality has been tested has resulted in an overwhelming triumph for the White. Four years of uniform success by our various models has shown reliability to be an inherent White characteristic.

Other Qualities Which Appeal to the Judgment

of the purchaser are the absolute noiseless operation, simplicity of control and MAXIMUM VALUE FOR MONEY EXPENDED.

Write for White bulletin No. 8.

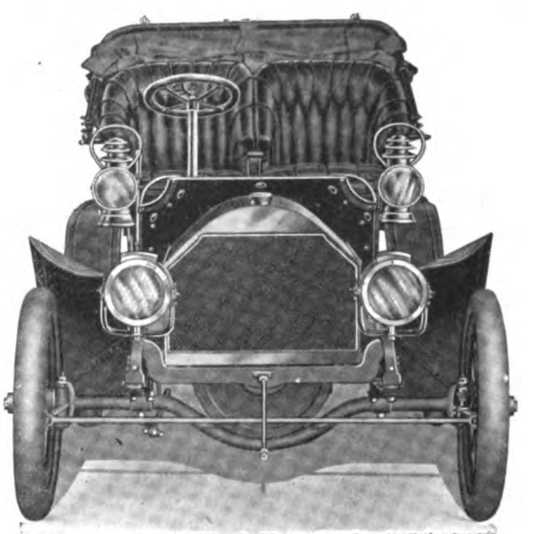
WHITE SEWING MACHINE COMPANY,

CLEVELAND, OHIO.

STEVENS-DURYEA

New 20 Horse Power Four Cylinder

TOURING CAR



MODEL "R."

STEVENS-DURYEA FOUR CYLINDER

DETAILED SPECIFICATIONS.

BODY—Aluminum, Tulip Style, Side Entrance.
COLOR—Body, Perfect Blue glazed. Gear, Naples Yellow.
SEATING CAPACITY—Five Persons.
ACTUAL WEIGHT—1650 Pounds.
WHEEL BASE—90 Inches.
WHEEL GAUGE—56 Inches.
WHEEL DIAMETER—30 Inches.
TIRES—Fisk Heavy Car Type, 3½ Inch.
STEERING—Wheel.
BRAKES—Three.
GASOLINE CAPACITY—14 Gallons.
FRAME—Pressed Steel.
HORSEPOWER—Twenty.
NUMBER OF CYLINDERS—Four Individual.
CYLINDERS ARRANGED—Vertically in Front.
COOLING—Water.
IGNITION—Jump Spark.
DRIVE—Bevel Gear.
TRANSMISSION—Sliding Gear.
CLUTCH—Multiple Disc.
SPEEDS—Three Forward and Reverse.
STYLE OF TOP—Extension Folding.
ENGINE AND TRANSMISSION SUPPORT—Three Point without Sub-Frame.

Price, $2500, Including Standard Equipment.

Write for beautifully illustrated catalog, embodying detailed description of this new product.

J. STEVENS ARMS & TOOL COMPANY,

690 Main Street,

CHICOPEE FALLS, MASS., U. S. A.

Members Association Licensed Automobile Manufacturers.

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GOODRICH TIRES



Integral Construction
VS.
Wrapped Tread Construction.

The so-called wrapped tread construction is not new. It is old, and came into existence only as a makeshift.

There are many objections and no advantages to this construction. It was brought about by the necessities of the first builder and has been copied by others.

The Integral Construction (Goodrich) represents the correct and logical method of building tires, and is new inasmuch as we are the first manufacturers in the world to make a success of it.

Many others have tried and after failure, adopted the wrapped tread construction.

We have just completed, by means of an accurate, practical machine constructed for the purpose, a test of each of the leading tires of the world, and against the best, Goodrich showed 50 per cent. greater mileage.

Specify GOODRICH Tires on your 1905 car and get the latest and best construction.

Send for pamphlet describing history of wrapped tread construction and advantages of Integral Construction.

The Bailey "Won't Slip" Tire. Regular Goodrich construction, but provided with the Bailey "Won't Slip" tread. Prevents slipping, slewing or skidding.

THE B. F. GOODRICH CO., - Akron, Ohio.

Michelin

Are your tires MICHELIN

or an imitation

E D. WINANS,
Gen Mgr

MICHELIN TIRE AMERICAN AGENCY, INC.
6 West 29th Street, New York
TELEPHONE 4657 Madison Sq.

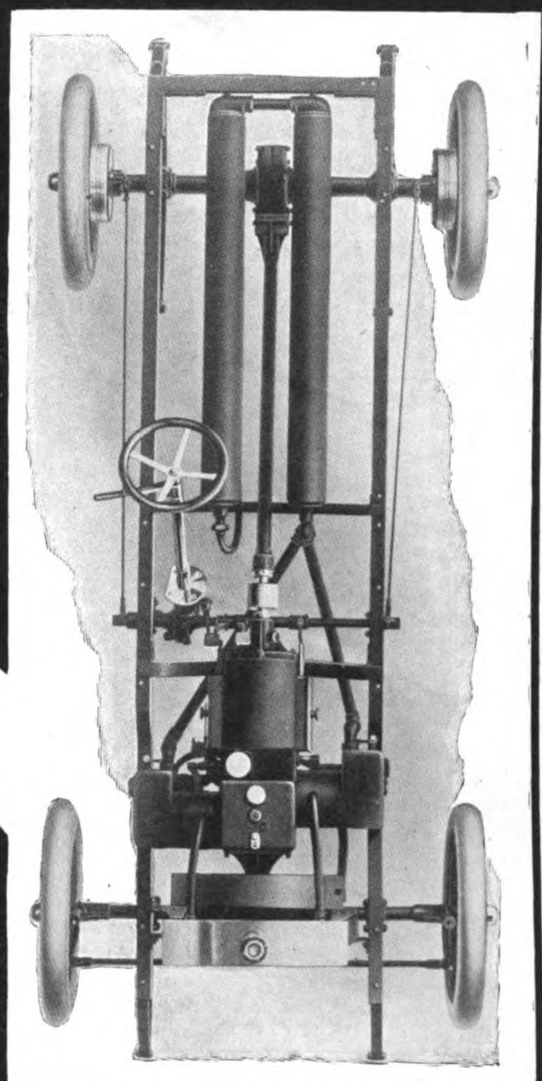
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The Question is, Where's the Machinery?

LOOK AT IT YOURSELF!

Note the conspicuous absence of complexity and that "machine-shop appearance" that scares away so many buyers.





THEN LOOK AT THE OTHERS!

You'll probably better understand why the "Silent Northern Touring Car" is the choice of discriminating buyers. Catalogue and book of testimonials for the asking. Better ask now.

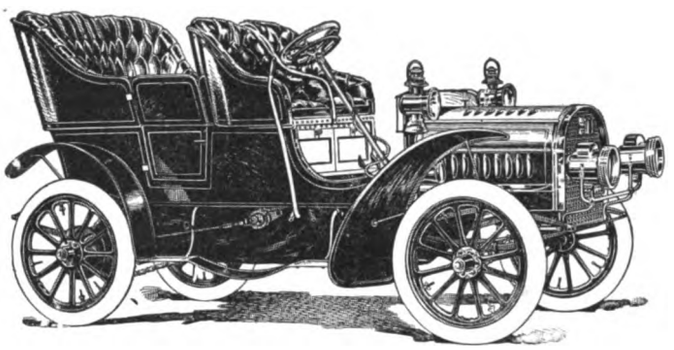
NORTHERN MANUFACTURING COMPANY,

DETROIT. MICHIGAN.

Member Association of Licensed Automobile Manufacturers.

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Rambler



SURREY, TYPE ONE

$1,350

18 H.P. *Immediate Delivery*

Other Models, $750, $850, $2000 and $3000.

There is no pleasure in traveling over country roads faster than this vehicle can carry you. Besides all needed power, it has exceptional road clearance and other provision for comfort, reliability and ease of control.

The working parts are readily accessible, and so simple that adjustments can be made without the help of a mechanic and without crawling under the machine.

To beauty, reliability, and ease of operation is added the comfort made possible by big, luxuriously upholstered seats, and the almost complete elimination of vibration by the long wheel base, full elliptic springs, large tires, rigid bracing of the engine and the balancing of all reciprocating parts.

Every part, except the body, tires and induction coils, is made in our own factory. The savings thus effected explain the low price.

When delivered, the machine is equipped with brass side, tail and two gas headlights with separate generator, brass horn, drop forged wrenches, oilers, pump and repair kit.

BRANCHES: BOSTON, 145 Columbus Ave. PHILADELPHIA, 242 North Broad St. CHICAGO, 302-304 Wabash Ave.
NEW YORK AGENCY: 134 West Thirty-eighth St.

Main Office and Factory, Kenosha, Wisconsin.

THOMAS B. JEFFERY & COMPANY

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, March 16, 1905. No. 25

SELDEN MEN BUY OPTION

Unexpectedly Slip in and Secure the First Claim on Sperry Ignition Patent.

Not less surprising than the news—published exclusively in last week's Motor World—of the unearthing of the Sperry patent of 1890, No. 433,551, as a master patent claimed to control the ignition of all save single cylinder engines, is the quick change that has been brought about in its probable ownership.

As the Motor World stated, the exploitation of the patent had been undertaken by A. L. Garford, president of the Federal Mfg. Co. He had interested several independent manufacturers in the syndicate which it was proposed to form for its purchase, and there was no suspicion but that it would become their property and that they would be able to present a strong checkmate to the Selden patent.

Early this week, however, it leaked out that men identified with the Selden interests had unexpectedly stepped in and purchased the option on the patent, and thereby placed themselves in position to command the situation should their experts, after investigation, recommend the consummation of the negotiations.

Information is hard to obtain. Just who are the men concerned or through whom the option was obtained cannot be learned, but it is understood that, discovering that Mr. Garford held merely the refusal on the patent and that no money or other consideration had passed to bind a transaction, they saw the loophole, and paid a sufficient price to secure the necessary legal option.

Hay Makes a Change.

Quite unexpectedly Thomas Hay, for the last three years manager of sales and advertising for the National Motor Vehicle Co., of Indianapolis, has resigned that position to take charge of the local sales of the Fisher Automobile Co., of Indianapolis.

The Fisher Automobile Co. are distributors of the Pope-Toledo, Winton, Olds, Buick and Pope-Tribune cars for the State of Indiana, or portions thereof, and maintain a subagency system that is very complete. They also expect to open a branch house in Logansport in order to better take care of the large number of touring cars that have recently been sold there.

In addition to automobiles, the company carries in stock a complete line of sundries, and claims to operate the best equipped garage in the State of Indiana. They are also headquarters for the Prest-o-Lite gas tanks.

Accessory Makers in Session.

At a meeting of the directors of the Motor and Accessory Manufacturers, held at the Iroquois Hotel, Buffalo, N. Y., on Friday last, the 10th, the show subject came up for informal discussion, but, although the entire board was represented, either in person or by proxy, nothing but routine business was transacted. It was decided to hold the May meeting in Hartford, Conn., when it is likely that the organization, which is caught between the fire of the two prospective New York shows, will go more seriously into the matter. As it is, the accessory men, who are friendly to both interests, are stared in the face by a doubling of expense.

Midgeley Moves to Hartford.

Thomas Midgeley, the head of the Midgeley Mfg. Co., Columbus, Ohio, who has been retained by the Hartford Rubber Works Co. as their consulting engineer, has taken up permanent residence in the Connecticut capital. This does not mean, however, that the company which bears his name and which produces the Midgeley pressed wheels and the rims for Dunlop tires, will lose his services, as it is part of his purpose to pay periodical visits to the factory at Columbus.

Adams Opens in Chicago.

The Adams Co., Dubuque, Iowa, have opened a Chicago salesroom at 1536 Michigan avenue. It is the first step toward actually placing the remarkably original Adams-Farwell car on the market.

G & J go to Boston.

To better care for their New England trade the G & J Tire Co. have opened a branch in Boston. Temporarily, at least, it will be located at No. 43 Columbus avenue.

TIRE TRADE AGAIN VEXED

Cost of Rubber Goes Away Up and May Compel Increase in Tire Prices.

Evidence of acuteness in the tire trade is again apparent, due to the amazing stretch of the price of rubber.

Quotations on the best Para gum last week touched $1.33 per pound, and, according to a particularly well informed tire man, there is every prospect that it will ultimately reach $1.50.

"And present prices," he added, "do not represent the real cost of the rubber to us. The stock we are getting is much greener than usual, which means that the shrinkage is correspondingly greater. The situation is not a comforting one. An increase in the price of tires is not desirable, and, if one is made, it probably will cause a mighty howl, and yet the condition of the rubber market is rapidly leaving us the choice of two dilemmas—an increase of price or a reduction in the quality of tires. And no manufacturer who has built up a reputation wants to tinker with the quality of his goods."

Gray & Davis Bring Suit.

In the United States Circuit Court in Philadelphia, Gray & Davis, Amesbury, Mass., have instituted suit against Charles E. Miller, the well known wholesaler, for alleged infringement of their patent, No. 764,396, of July 5, 1904. The proceedings are based on Miller's sale of Atwood lamps that are claimed to infringe the Gray & Davis patent in question, which covers their well known Bullet lamp. A defense will be entered.

Parker Joins Fisk Staff.

Burton Parker has been appointed advertising manager of the Fisk Rubber Co. He previously occupied a similar position with the Hartford Rubber Works, and later with the Olds Motor Works.

Henley Goes With Reliance.

A. B. Henley has been appointed sales manager of the Reliance Motor Car Co., Detroit. He formerly was connected with the Electric Vehicle Co. and Pope Mfg. Co., in Hartford, Conn.

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$13,500 FOR NON-DELIVERIES

Court Awards Plaintiffs this Sum, but Meanwhile One Defendant Has "Gone Broke."

Judgment for $13,500, with interest from the date of suit and for all costs, has been rendered by Judge Morrow, in the San Jose (Cal.) Circuit Court, in favor of the Automobile Traction Co. of San Jose, Cal., against the Universal Automobile Co. and the Ætna Indemnity Co.

The plaintiff is a California corporation, A. H. Eddy and Charles W. Coe, of San Jose, being the principal officers and stockholders. In June, 1903, they made an agreement with the Universal Automobile Co. to purchase a number of cars for use in and about the city of San Jose. The cars were to be delivered in forty-seven days, and the price agreed upon was $4,500. Under the agreement Eddy & Co. were to pay one-half down, the remainder upon delivery of the machines. Payments were promptly made, but the cars were not delivered, and in December the stockholders went to San Francisco and protested against the violation of the contract. General Hart was the leading spirit representing the defendant, and acted as president of the Universal Automobile Co., which was a South Dakota corporation.

At the meeting in San Francisco it was agreed that if Messrs. Eddy & Co. would put up an additional $1,000 the Dakota corporation would give a bond for the faithful carrying out of the original contract to furnish the cars, and would guarantee delivery in an additional thirty days. Under that agreement the bond was deposited with the Ætna Indemnity Co., but neither the latter company nor any of the defendants carried out the agreement, and the cars were never delivred.

Suit was then begun in the Superior Court to recover damages for breach of the contract. General Hart had the case transferred to the Circuit Court, with the result that the indemnity company has been ordered to pay the plaintiffs $13,500, together with interests and costs.

Pending the proceedings the Universal Automobile Co. went into bankruptcy proceedings, and all its holdings were sold to pay the claim of preferred creditors, so that now the entire loss falls upon the surety company.

Pope in His New Garage.

What the owners believe to be the best equipped garage in America was formally opened in New York on Thursday last—the Pope garage, which will be headquarters, of course, for the various products of the Pope Mfg. Co., including the Pope-Toledo, Pope-Waverley, Pope-Hartford and Pope-Tribune cars.

The new structure is one of the most modern of its kind, and has every possible equipment for the comfort and convenience of its patrons. It is a four story building fronting on Broadway, near Fifty-fifth street, with an entrance on Fifty-fifth street. The basement is used for storage, with a turntable next to the elevator to send cars in any direction. On the main floor is the showroom and administrative offices. On the floor above is the ladies' parlor, room for chauffeurs, a commodious locker room for patrons and shower baths. The third floor contains storage and repair facilities and the electric charging plant machinery. On the fourth floor is a complete repair shop, equipped with the most modern machinery, including a travelling crane. There are pits in the floor to facilitate working under the cars and a ball bearing turntable next to the elevator. Here, too, is a complete stockroom and a dust proof room, where cars are painted and varnished. The garage is in charge of Elliott Mason, who for nearly a quarter of a century has been identified with the Pope interests.

The Profits of the Shows.

The profits of the Automobile Show, held at Madison Square Garden, New York, last January, were $55,933.33, not $59,933.95, as first reported. Of this sum the Madison Square Garden Co. received 40 per cent, or $22,373.27, and the Automobile Club of America and the National Association of Automobile Manufacturers each received 30 per cent, or $16,780.18.

The receipts of the Chicago show totalled $30,504.54, of which S. A. Miles, as manager of the National Association of Automobile Manufacturers, took the first $6,000 as his salary for the year. After deducting this amount the net profits were $24,504.54, of which Miles's share was one-third, or $8,168.18, and the share of the N. A. A. M. two-thirds, or $16,336.36. This makes Miles's income for the year as manager and show promoter $14,168.18.

Alleged Guarantee Leads to Court.

The Mississippi Valley Automobile Co., of St. Louis, Mo., is the victim of a trick played by an East St. Louis man, who claims that the firm owes him $200 damages for breach of contract. Russell Richardson telephoned to the automobile company to send its best car to East St. Louis, as he had a customer for it. When the car arrived Richardson and a constable were waiting with a writ of attachment, and the chauffeur had to walk back. Richards claims $200 damages for the company not fulfilling a contract which they made to him when he bought an automobile from them, they guaranteeing to keep it in repair for one year. Richardson is the defendant in a suit filed by the Mississippi Valley Co. for repairs on the car he purchased.

New Retailer in Utica.

The Utica Motor Co. have just organized in Utica, N. Y., with Frank E. Howes as manager. They will handle the Ford and Premier cars, having established a salesroom and garage at No. 128 Lafayette street.

PIERCE OFFERS BIG PRIZES

Apportion $1,000 to Obtain New Ideas in Body Designs and Finishes.

If there is any ingenuity or artistic talent going to waste or that requires encouragement to be turned to practical benefit, the George N. Pierce Co. has set out to supply the needed incentive. They particularly seek to develop body design and artistic finish, and to that end have appropriated $1,000 for competitive effort on the part of those who may consider themselves gifted.

This prize money has been apportioned in this wise:

For motor car open bodies—First prize, $250; second prize, $100; for a body for a side entrance car, based upon availability, usefulness and beauty. Specifications to be supplied.

For motor car enclosed or Limousine bodies—First prize, $250; second prize, $100; for a design for a body with side entrance, as per specifications to be supplied to be based upon availability, usefulness and beauty. Competitors must supply scale drawings of side and rear elevation and seating plan.

For color scheme for motor car bodies—First prize, $200; second prize, $100; for a color scheme of some existing type of our motor car, either open or enclosed. In awarding prizes the reliability of colors chosen and the appropriateness to the service will be considered.

The contest will close June 1, 1905.

All designs not worthy of award will be returned at the company's expense, or will be paid for at a price not to exceed fifty dollars at the company's option.

Gawthrop Scorned the Railroad.

W. W. Gawthrop, Eastern sales manager of the Elmore Mfg. Co., of Clyde, Ohio, and who is responsible for much of the success of the Elmore in the East, drove over from Philadelphia to the Boston Show last week, closing four agencies en route. Despite the trying weather conditions and bad roads, the Elmore, on its arrival in Boston, was promptly put in commission as a demonstrating car, and has been in service all week without any repairs or overhauling.

Royals in the Motor Shop.

The Motor Shop, Incorporated, 317-319 North Broad street, Philadelphia, has taken the agency for the Royal Tourist. The Motor Shop has taken the quarters formerly occupied by the Darracq, and are making extensive alterations.

The Chenys Begin Business.

Robert and Harry G. Cheny have started in business in Manchester, Conn. They will carry a full line of Columbia electric and gasolene and Walter gasolene cars.

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SEEKING A SHOW BUILDING

A. C. A. Committee Meets Only to Adjourn — January Dates Conflict with Armory Usage.

A meeting to perfect details of the proposed show for next year was held by the show committee of the Automobile Club of America yesterday. Though no longer a member of this committee through having recently assumed the office of chairman of the building committee, A. R. Shattuck was also present. The latter's place on the show committee has been taken by W. A. Hamilton.

Plans were discused at length, but according to General George Moore Smith, chairman of the committee, nothing of moment was passed upon.

"The Board of Governors of the A. C. A. decided some time ago definitely to hold hold a show and referred the matter to the committee," said the General to a Motor World representative. "But we can't hold a show in the street, and nothing further can be done until a place has been arranged for." Naturally an armory is about the only building sufficiently large, and there are complications in the way of obtaining one. The Seventh, which has a larger floor space than the Garden, is the only armory of which its officers have complete control. The latter were not averse to having it used as an exhibition hall until they heard the date, and then deal was all off.

"When they learned that it would be wanted during January," he continued, "there was nothing more to be said, and this is somewhat of a hitch where the other two armories under consideration—the Seventy-first, at Thirty-fourth street, and the Sixty-ninth, at Twenty-sixth street—are concerned, but not of quite the same weight. The officers of either of these regiments have no insurmountable objections to suspending drills for a week, but the armories themselves are city property, and there are questions innumerable and miles of red tape to be unwound. The principal objection is that if an armory is permitted to be used for an automobile show, there will be a hundred and one applications to use them for other exhibition purposes. On the other hand, the compensation received would enable the regiment to fit up a gymnasium or bowling alleys—something which the city doesn't provide. In fact, if a proposition were broached to spend city money for such a purpose, I myself, as a member of the armory board, would vote against it."

To the question as to who the exhibitors would be, the general replied that "it would be a free-for-all show—any manufacturer of automobiles or accessories who wishes to exhibit may do so. The A. C. A., from its position in the automobiling world, could not afford to do otherwise. There can be no taking sides with any organization of whatever nature."

The Week's Incorporations.

New York City, N. Y.—Automobile Arcade, under New York laws, with $30,000 capital, to deal in automobiles. Corporators—J. L. Scott, Louis Schwarz and E. C. Griffith.

Milwaukee, Wis. — Western Automobile Supply Co., under Wisconsin laws, with $40,000 capital. Corporators—Edmund Verstraete and Winfield S. Grant.

Atlantic City, N. J.—The Auto Speedway Co. of America, under New Jersey laws, with $100,000 capital. Corporators—Walter H. McDougall, Louis Kuenkle and James O. Walsh.

New York City, N. Y.—Lincoln Carriage & Automobile Co., under New York laws, with $5,000 capital, to make automobiles. Corporators—A. M. Lasser, L. Lasser and W. R. Ecker.

South Orange, N. J.—South Orange Motor Co., under New Jersey laws, with $100,000 capital. Corporators—Fred Ardrey, Clara Ardrey, Alick Merriman and Evelyn Merriman.

St. Louis, Mo.—Automobile Exchange & Supply Co., under Illinois laws, with $5,000 capital, $2,500 paid in, to deal in automobiles. Corporators—A. L. Dyke, C. J. Dyke and Charles Peters.

Cleveland, Ohio—Whitcombe Automobile Co., The T. C., under Ohio laws, with $10,000 capital. Corporators—T. C. Whitcombe, M. J. Roseboro, S. Q. Kerrnish, W. S. Kerrnish and J. MacBeth.

Boston, Mass.—Tremont Garage Co., under Massachusetts laws, with $10,000 capital. Corporators and officers — President and treasurer, Frank D. Stranahan; clerk, Anna R. Stranahan.

Providence, R. I.—Flint Motor Car Co., under Rhode Island laws, with $30,000 capital, to manufacture, buy, sell and repair automobiles. Corporators—Elliott Flint, Franklin M. Chenery and Thomas P. Allen.

Boston, Mass.—Veerac Motor Car Co., under Massachusetts laws, with $60,000 capital, to deal in automobiles. Corporators and officers—President, C. F. Whitney; treasurer, A. P. Delabarre; W. E. Decker.

Fight for the Name "Knox."

On Saturday last the Knox Automobile Co., Springfield, Mass., obtained an injunction restraining the Knox Motor Truck Co., of the same place, from using in any way the name Knox as applied to self-propelled road vehicles or parts thereof. As the truck company was exhibiting in Boston, this prevented their display of a sign or printed matter of any kind.

On Monday, however, the Superior Court modified the injunction by temporarily permitting the Knox Motor Truck Co. to use the title on such signs or matter, provided the words "not Knox Automobile Co." are also displayed in letters of equal size above or below such title.

Issue will be joined on Tuesday next, when the case will go to jury trial.

"J. C." IS WANTED BADLY

Played a Low-Down Trick on Rambler People and They Offer $50 for his Name.

The ways of some men are past understanding. George W. Bennett, the well known manager of T. B. Jeffery & Co., had reason to remark the fact when, after an absence, he returned to the factory at Kenosha, Wis., last week. He found awaiting him a number of requests for information regarding the 10 per cent discount on Ramblers. They caused him to set up straight and "say things" in his emphatic fashion.

This innocent little two-line advertisement in the classified column of the Chicago Tribune was the cause of it all:

"Ten per cent off all new 1905 Rambler automobiles. J. C., 300 Tribune."

J. E. Gunther, manager of the Rambler branch in Chicago, and several of his staff had already answered the advertisement. Bennett and six of his friends did likewise. They all were "anxious" to obtain that 10 per cent. But nary an answer did they receive. "J. C." evidently had other ends to accomplish.

Bennett then had the newspaper office investigated. All he learned was that the initials "J. C." constituted a token that the advertisement had been handed in either by a large advertiser or at a suburban office. It was not enough to suit Bennett. He is fairly itching to discover "J. C., 300." If any one can uncover the guilty man $50 of Jeffery money will be cheerfully presented for the service. Jeffery & Co. have advertised such a reward in the Chicago Tribune, but at last accounts "J. C." was still hiding a diminished head.

Sweden to Hold a Show.

Although Sweden has not a single automobile manufacturer an exhibition is to be held next April. The show, which is being organized by the Swedish Automobile Club, will comprise passenger automobiles, delivery wagon automobiles, automobiles for sanitary and fire appliances and military purposes.

Dyke Can't Use His Own Name.

A. L. Dyke, who after retiring from the A. L. Dyke Automobile Supply Co., St. Louis, Mo., continued to make use of his name in the automobile trade, has been enjoined from continuing the practice. It forced him to find cover under title of the Automobile Exchange & Supply Co.

Goodyear Opens in Los Angeles.

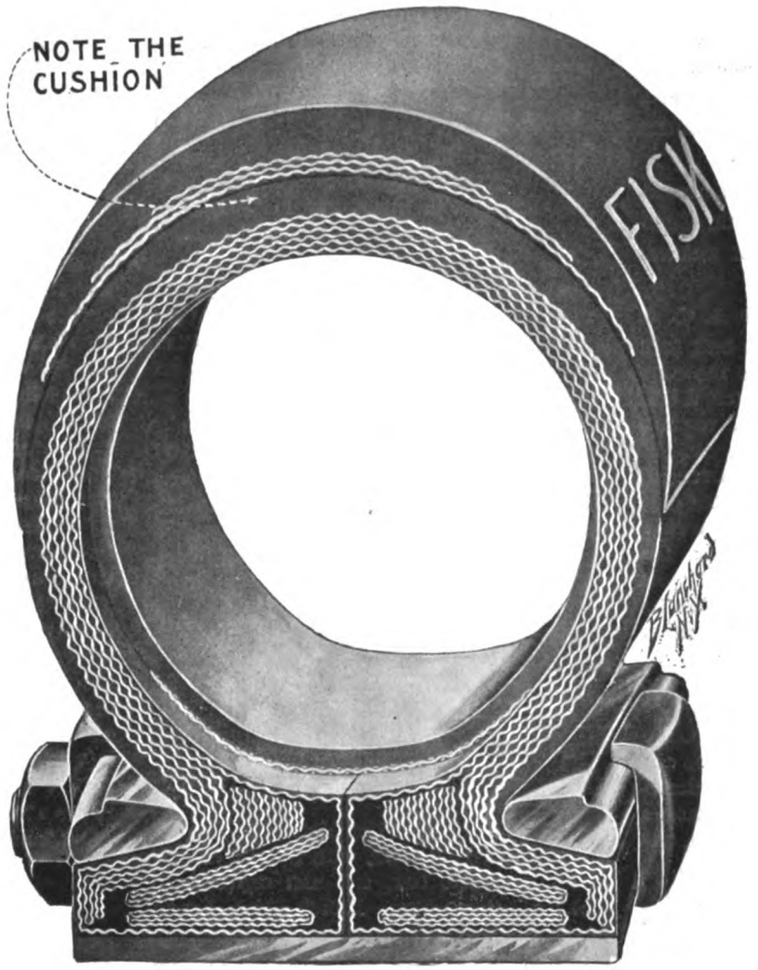
The Goodyear Tire & Rubber Co. have opened a branch store at No. 932 South Main street, Los Angeles, Cal. It will be in charge of W. D. Newerf.

Syracuse, N. Y., is coming into line. The Board of Contract and Supply has ordered a $3,500 electric patrol wagon from the Amos Pierce Automobile Co.

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NO ECONOMY

in the purchase of a car is so false as economy in tire selection.



IF

we can get a copy of our booklet into your hands, we believe it may prove the means of saving you not merely many dollars in money, but many hours of vexation and discomfort and, like as not, many days' disuse of your car. A word from you will bring a copy.

The Fisk Rubber Company, Chicopee Falls, Mass.

BRANCHES: New York, 754-756 Seventh Ave. Chicago, 1251 Michigan Ave.

BOSTON, 226 Columbus Ave.
SPRINGFIELD, 40 Dwight St.
PHILADELPHIA, 828 Arch St.
ATLANTA, 103 N. Pryor St.
SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
DETROIT, 254 Jefferson Ave.
MONTREAL, CANADA

ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
MINNEAPOLIS, 704 Hennepin Ave
DENVER, 1534 Glenarm St.
SAN FRANCISCO, 114 Second St.
LOS ANGELES, 1034 So. Main St.

LONDON, ENGLAND

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THE MOTOR WORLD

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The Self-Starting Feature.

Is self-starting—the ability to get under way instanter without the essential preliminary of winding the crank—a feature of the up-to-date gasolene car, without which the latter cannot be said to be complete? Or probably the question may better be put. Is self-starting a feature of any gasolene car that warrants the addition of any complication, no matter how small?

The question must be looked at from varying points of view—principally two—in order to receive an adequate answer. And, strangely enough, these do not involve its practical side nor the ease with which it may or may not be applied to any certain type of car, but rather to the owner of the latter. For instance, take the high-powered four-cylinder car on which various attempts have been made to apply it, and in the great majority of instances it is found they are the property of individuals sufficiently wealthy to employ a professional "shover" as an adjunct; it certainly is not a question of great moment to such an owner whether his servant has to raise a little extra girth on his biceps in producing sufficient initial compression for a start or not. If everything is as it should be half a turn does the work; if not, it is the "shover's" duty to see that it is, and the matter hardly admits of any further argument from this point of view.

From the standpoint of the purchaser of a moderate priced machine, the fact that the ability to stop the motor at any time without the necessity of dismounting to resume action, is a reliable feature of a car, would be much in its favor, and certainly an added charm, cannot be gainsaid. Where the owner, the driver, the chauffeur, the mecanicién and the repairman—except when serious trouble is in view—are, like the crew of the Nancy brig, one and the same individual, this functionary would prefer not to demean himself by descending to the street level to do the cranking, if it can possibly be avoided. On the other hand, he cannot afford to pay a high price for his machine in the first instance, and added refinements of this nature increase first cost greatly, as well as involving in many cases needless complication.

Where the owner of the light runabout is concerned, the question can hardly be said to exist, for this is a type of car the first cost of which prohibits the addition of any refinements purely in the shape of luxury, while, on the other hand, many may be termed self-starting; that is, they are intended to be cranked from the seat, and so far as the necessity of dismounting is obviated, sufficiently to fulfill the condition.

But, considered from any point of view, it must be evident that self-starting is a feature that must sooner or later become universal on the gasolene car of every type. Like the side entrance tonneau, it has to come, and for almost the same reasons; the only question is how to bring it about satisfactorily. That the solution does not lie in complicated adjuncts to a system already overburdened with detail is clear from the number of devices designed for this purpose that have been tried, only to be cast aside.

Concerning the Cost of Upkeep.

How much does it cost to run a small car, is undoubtedly the question uppermost in the mind of the average purchaser of limited means who goes in for a light runabout as a starter. Do the numerous endurance tests, specially conducted by the makers under the supervision of one of their most experienced employes, demonstrate satisfactorily what the average should be? Or, on the other hand, do the occasional newspaper stories of buyers who have been compelled to pay as much as two or three times the original cost of the machine in repairs in a single season—in one instance actually becoming bankrupt—come nearer to representing the truth.

Practice does not, of course, run to extremes in either direction, so that it is safe not to accept one or the other of these statements at its face value. The makers' test is carried out under conditions not approachable by the average individual owner, while cases of excessive repair bills are usually due to specimens of monumental ignorance or recklessness—often both—sometimes to defective workmanship in the car itself, but such instances are probably so few and far between where reliable makes are concerned that they may well be ignored.

More statistics have been gathered on this point of vital interest during the past twelve months than in any previous year of the industry, and the results should prove interesting to all whom cost of maintenance is a feature of prime importance. Probably there are few manufacturers who do not follow such trials and strive to benefit from the experience thereby gained to an extent little appreciated by the average individual owner.

A glance over the tabulated results shown by the carefully compiled records made on special endurance runs held by makers, as well as by those owners who have been sufficiently interested in the matter to produce records that are accurate enough to be of value, seems to bring one thing out prominently in every instance, and that is the cost of tires. In one run abroad—where they prate of superiority in tires as in all else—held under skilled supervision, this exceeded by fully 25 per cent. the entire cost of fuel—to be exact tires cost $100 and fuel $75 for a run of several thousand miles. Figuring the total cost of maintenance in this case, the cost of tire repairs and replacements still exceeded it somewhat. This might be considered an extreme case, but for the fact that figures in the majority of others are such as to substantiate them—tire maintenance is unfortunately always an entirely disproportionate fraction of the total.

Attempts to economize by saving a few pints of gasolene per hundred miles, or a corresponding economy in lubricants, seem futile in the face of such a state of affairs, but this can hardly be put forth as a good reason for standing still where improvement in fuel consumption is concerned. Probably as much may be accomplished some day at a single stroke in the solution of the tire prob-

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lem as required years of close study to bring about in the engine. It is greatly to be hoped that that day is not too far in the future. Meanwhile experience points unerringly to the truth of the statement that no economy is so false as that which seeks to save a few dimes or dollars in the selection of tires. The best is always the cheapest in the end.

About Accessibility.

"Accessibility" is a watchword of every motor car salesman. It is the centre from which all his arguments radiate, and the point to which he invariably returns in conclusion. And, indeed, it is a most desirable quality, and one of the five virtues with which every car should be endowed. But it is often applied to an exaggerated degree, and not infrequently, when used by the dealer in a highly colored sense, its meaning is purely relative. For example, in some cases, the statement that the inlet valves are thoroughly accessible, may be taken by inference to mean that the exhaust valves are not, but quite the contrary.

The ideal car would be so constructed that every individual organ could be removed without disturbing any other, and that by the briefest, simplest process imaginable. Moreover, parts would not only be so placed that they might be gotten at, inspected and adjusted without serious interference with other functions, but such a process should not entail an acrobatic performance on the part of the mechanic, nor an abnormal cleverness in the use of his finger ends.

One who has spent the greater part of an hour lying on his back and reaching up with one hand through a small, round hole, vainly experimenting with various small tools in an endeavor to locate the proper position of an obstreperous cotter pin, in an effort to lock up a connecting rod, will fully appreciate the value of the quality, nor will he quibble at its being called a virtue.

Accessibility is, and should be, a relative quality; relative in a strict sense, and governed by two considerations, the comparative importance of the part in question, and its liability to get out of order. And apparent though it may be, the neglect of this very important principle costs the builder, the dealer, the owner and his mechanic many a dollar every season. Here is an illustration.

In a foreign car large numbers of which are in use on this side of the Atlantic, it is necessary to dismount the motor or else to remove the transmission, a process which, by the way, involves taking it entirely to pieces, in order to dissemble the clutch. The latter, although of the self-contained variety, and not of itself likely to become deranged, is, however, lubricated by oil which drips from a pipe onto the outside of the flywheel, and in due season, other things being equal, finds its way somewhat tardily to the thirsty mechanism within. In fact, this whole car is so cutely put together, that to do anything more than superficially examine the power plant involves an analysis of the thing into a multitude of little component parts, beginning with the starting crank, and ending with the cardan joint in the propeller shaft. And yet the dealer is wont to airily lift a couple of floor boards, and uncover the gear case with a flourish to show the stranger how very accessible is all the mechanism. Another foreign car—one of the best—for a long time was so constructed that to get at the governor required the dismounting of the starting gear in its entirety, disconnecting and removing the commutator, and then to remove a certain gear housing which obstructed the view of the mechanism in question. This is not intended as a criticism of prevalent design, by any means, but rather as a definition, but suggests that though the clutch in one case and the governor in the other are staunch and durable, they are buried, to all intents and purposes, and that a comparatively slight alteration in form in either case would have made it possible to uncover them at a great saving.

Sometimes the builder swings over on the other tack and complicates matters in consequence. A certain car which is lauded as a paragon of accesibility has the half-time shafts with all their appurtenances mounted on top of the cylinders. Accessible they are, to be sure, but of what avail is it, since their position is an exposed one and entails added complication in the removal of the values? In this case those parts of the mechanism which are least likely to get out of order, namely, the cams and their followers, are most easily gotten at, while others, which require more frequent attention, are more remotely placed.

The point to be emphasized is this: In order to be "getatable," parts need not be in an exposed or unnatural position, a casing or housing of one sort or another does not seriously interfere with the approachableness of the mechanism it protects, so long as it be removable without interference with other parts of the machine. And again, to so arrange parts that they may be inspected simply is not enough; they must be readily removable and easily adjusted, without the disturbance of other functions, without contortion on the part of him who is responsible for the car's well being, without prestidigitation on his part, and without great sacrifice of that breathless mystery—time.

Accessibility is then one of the subordinate, albeit very essential, factors which the draughtsman must have cut into the edge of his board in great big initials, as something he must constantly bear in mind. It is by no means a new desideratum! the builder has recognized its value all along, and striven to exalt it; he is working for it still, and will not cease to do so. But since it is subordinate to other considerations, it cannot be expected to develop all at once. Its best application cannot be obtained until the developing, compacting, simplifying process has reduced the motor to its lowest terms, and the round-shouldered man with the yellow pencil behind his ear has more leisure to attend to the refinement of his work.

"Many a tow home behind a 'haymotor' could have been avoided by carrying a spare chain, or at least a few spare links, in the toolbox; and the same may be said of a number of small parts," says the Automobile.

Why not add that many such an unpleasant experience might have been avoided by carefully inspecting the car before it left the garage? For, except in extraordinary cases, nuts get loose and stay loose before they come off, and parts show flaw before they break, or, in fine, every disease has its own premonitory symptoms, and the ounce of prevention applied in a saturated solution of simon pure common sense will often check the disorder before it comes to a climax, or will at least check its spread to other organs. If my lord the chauffeur would cut short the poker game and get right down on his stalwart back under the car with a monkey wrench, instead of giving orders to "have it fixed" by one of those dirty fingered mechanics on whom he affects to look down, he would stand a better chance of retaining the position of which their active ambition and skill of hand tend to rob him.

Franklin Murphy, Jr., has invented a device to limit the speed of automobiles to twenty miles per hour. Franklin Murphy, Sr., former Governor of New Jersey, recommended a law requiring the use of such a device. Papa has a great head!

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Boston Show Proves an Eye-Opener

Attains Magnitude of a National Exhibition and Attracts an Overwhelming Attendance—47,500 Persons Present the First Night, and Police Prohibit Further Admissions—Five new Cars Make their "Debut," two of them Being Radical Departures from Accepted Standards.



DEMONSTRATION CARS OUTSIDE MECHANICS' BUILDING.

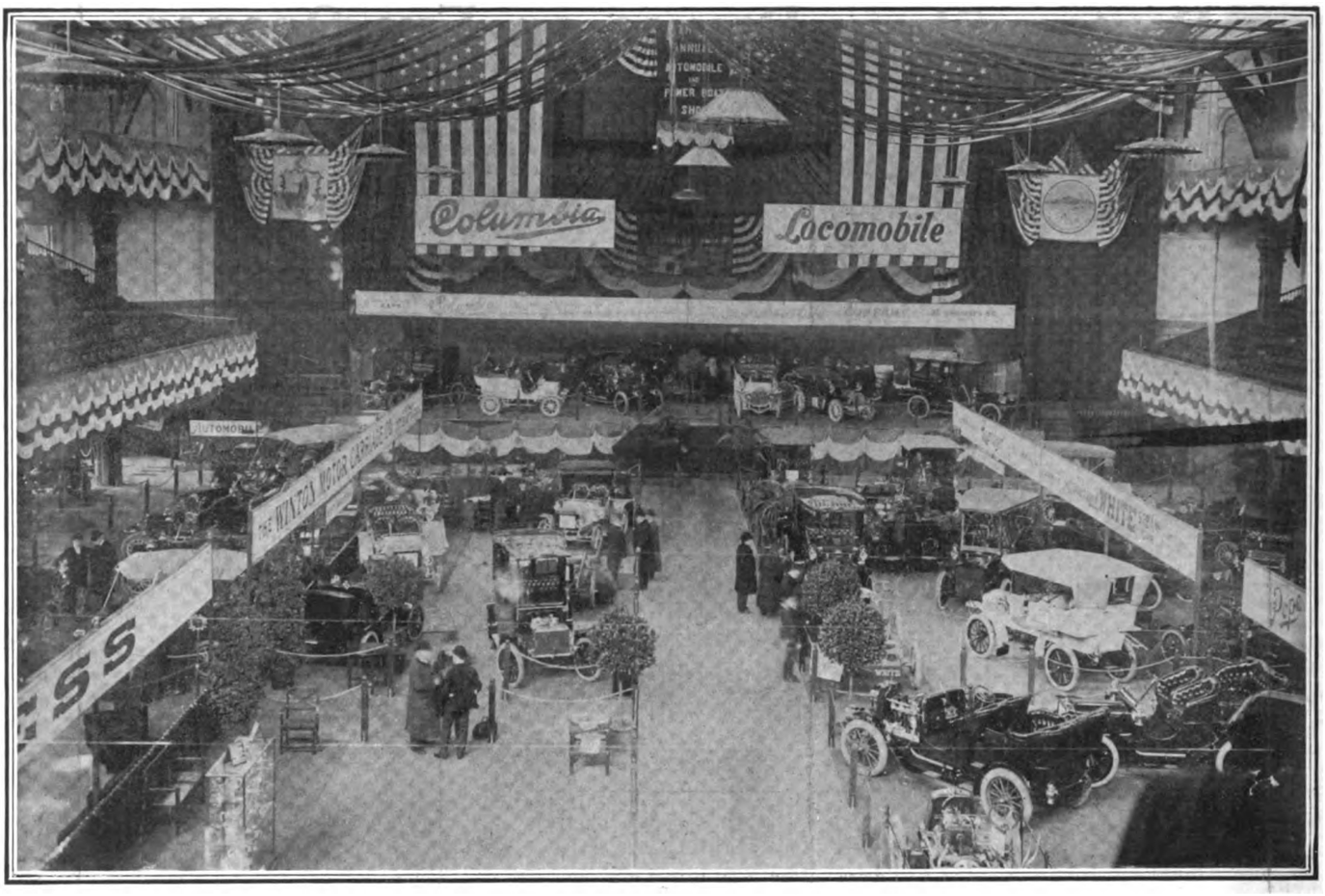
Boston, Mass., March 13.—Up here where they swear by the sacred codfish and are so modest about it that they do the swearing in whispers, and where the blood of the populace is supposed to be so diluted with ice water as to make it difficult for the boiling point to be reached, the Automobile Show, which opened in Mechanics' Building on Saturday evening last, sent up their temperatures way above that point before the doors had been opened two hours. And a great show it is, too—quite the greatest ever held outside the confines of Madison Square Garden, New York. In the absence of authentic figures to the contrary, it may be added that never during any one night of a New York show was the Garden packed so tightly with humanity as this show was packed on Saturday night; and there have been some sardinelike crowds in the Garden, too.

The Boston crowd came early and stayed late. Those in the know were aware that 15,000 free tickets had been distributed for the opening night, and, although they had no idea that more than 40,000 people were crowded into the building during the evening, on several occasions a jocular wager was offered and declined that of the 15,000, 14,999 of the free admissions had been used. The building was simply packed to suffocation—the crowd swarmed everywhere, and although it was plain that the price of a motor car was beyond the means of the vast majority, it did not seem to lessen one whit their interest in the exhibits. They were far more inquisitive than any New York or Chicago crowd ever thought of being.

Looking down from the gallery in the concert hall at about 9 o'clock, not only were the aisles tightly wedged, but every car was so closely surrounded by people that the cars were practically hidden. It seemed an exhibit of humanity rather than of automobiles. It was only to-day when it was announced that the official count showed 47,500 admissions that a true idea of the immensity of Saturday's gathering was obtained; it was also made known to-day that so crowded was the building that the police had to put up the bars and refuse to admit the late comers, of whom it is stated there were several hundred, if not several thousand.

Even before the show opened, however, the promoters had apparently borrowed a leaf from Chicago, and were claiming everything, so to speak. The sign on the building, flung to the breeze, proclaimed that it was "the greatest and most complete show of its kind ever held in America.' Inquiry developed that the promoters really believed what the sign stated. They claim to have not only more floor space than Madison

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GENERAL VIEW OF EXHIBITS IN CONCERT HALL.

Square Garden or the Chicago Coliseum, but also that they actually have more exhibitors than were in evidence at the shows in those places. None was fortified with figures to discomfit the claimants, who, however, were not unpleasantly assertive on the points. They certainly were safe in making the statement concerning their excess of exhibitors. Probably no man but the bookkeeper will ever know exactly how many are here.

The one feature of the show that is unworthy of it is the official programme. It is bulging with advertisements, and gives in great detail the orchestral programme for each day; but as for shedding light on the nature of the exhibitors or their location in the building it might as well not have been printed. It is enough to turn gray the hair of a newspaper man whose business it is to seek out and "check up" such data. It gives not only the name of the manager of various branch stores and of the agents of the various cars, whether they stage one brand or several, but also specifies the name of each separate manufacturer. Each manager, agent and manufacturer is made to appear a separate exhibitor, but no locations or the nature of the ware shown are included. It is possible that this method of listing may be responsible for the Boston count and the Boston claim of the greatest number of exhibitors.

This, however, is an incidental, and, although an aggravating one in many instances, it does not affect the merit of the show itself. It is, as stated, a great big show, spread out in a building admirably adapted to the purpose and splendidly appointed. In the concert hall, where the band plays daily and where the music loving Bostonians occupy the gallery chairs for hours at a time, the aspect is almost parlorlike. Here are grouped all the "elect"—the Pope and the Pierce, the Olds and the Rambler, the Peerless and the White, the Haynes and the Apperson, the Acme and the Northern, the Baker and the Autocar, the Ford and the Elmore, the Winton and the Packard, the Grout and the Yale, the Knox and the Cadillac, the Cleveland and Kenneth Skinner's line of foreign cars. On the stage, overlooking all these, are the Locomobile and the Columbia. The signs are harmonious—gold lettering on white backgrounds—and the exhibit spaces are carpeted with reddish matting, while nearly every booth has its quota of palms, plants and stunted shrubbery. The absence of electric lighted signs is scarcely missed.

In the main hall, and on the galleries above it the effect is not so impressive, and yet throughout there is a sweet, clean appearance that is not found at other exhibitions of the sort. Modified in a measure, this holds true even of the basement. By comparison, the basement in Madison Square Garden and the odor that seems ever to cling to it is a dungeon. The basement of Mechanics' Building is bright and clean and not stuffy. There is a motley display down there, motor boats and appurtenances forming the bulk of the exhibits.

Outside of the concert hall there is small effort at decoration; each space is carpeted, and above it the sign in white and gold; and, as a matter of fact, but little decoration seems necessary.

As always, the tire booths stand out conspicuously because of that quiet, effective simplicity of display in which the exhibitors of no other wares seem so well versed. Excepting the Diamond booth, the Hartford, the G & J and the Morgan & Wright spaces appear not unlike well appointed offices of well appointed merchants. The Diamond Rubber Works have departed from this beaten path and have had recourse in Moorish effect. Their booth is located at one of the entrances between the concert hall and the main hall, thus making it possible for them to obtain the full Far Eastern effect.

Those walking information bureaus in white duck, with the word "Page" on their arms, are, as in previous years, a feature of this show. They circulate everywhere, and are supposed to be able to answer all questions instanter.

One of the uncommon features of the display in the concert hall is the first automo-

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bile built by Elwood Haynes in 1893. By contrast with the magnificent touring car beside it, it tells without words the amazing progress that has been made.

In the gallery of the main hall there is also a display of typical Boston—that of the Y. M. C. A. Automobile School. It is made up almost wholly of photographs, charts and blueprints of motors and the like, and photographs of its pupils in various stages of instruction.

Just as the show is notable as a spectacle and as an unusually well attended function, it is noteworthy also for the number of cars that were not shown at either New York or Chicago. Two of them, the Gasaulec and the Sturtevant, embody radical departures from accepted practices that may mark epochs in the industry. Although the familiar levers are missing, in appearance they do not differ materially from touring cars of the standard type; there is none of that freakiness of design which marks so many wonder workers. These two cars are the product of ripened experiment, and are brought forward by manufacturers of means and standing; nothing like them ever was seen at any previous show held anywhere. Foreknowledge that they were to make their formal debut at this show led the Motor World to have the well known expert, Henry Souther, on the spot. He subjected them to close scrutiny, and his report, after thorough examination, is as follows:

SOUTHER ON STURTEVANT CAR.

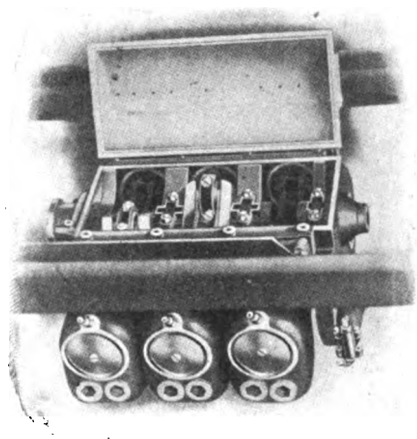
Naturally the Sturtevant car, shown by the Sturtevant Mill Co., of Boston, is a centre of much interest; although in general outline it does not differ greatly from other cars, it differs just enough to attract the attention of the ordinary observer, and proves worth the study of the automobile engineer. It contains food for much thought.

In the arrangement of the motor it departs from the accepted type, with the engine under the hood forward.

In the type of engine it is new among gas engines. There are six cylinders, horizontal and opposed. There are but three cranks, as two cylinders work on each crank from opposite sides.

The cylinders are 4½x5, and by actual brake test in the laboratory of the company have developed 38 to 45 horsepower at 1,200 revolutions per minute. The engine over all is just the length of the width of the car, the cylinder heads coming flush with the sides nearly under the footboard. The spark plugs and valves are accessible without moving anything, and yet are protected by the frame and body from injury and the weather. The crank case is accessible by removing the footboard, which is especially made for the purpose. The engine is therefore fully as accessible as any engine, and rather more accessible than many of them.

One carburetter supplies gas for all six cylinders, and is located in the dash. The carburetter is of especial design, and is the result of most careful work extending over a period of four years. There is a governor on the carburetter that keeps the engine throttled to about 250 revolutions per minute, this being a speed that is made necessary from the fact that at speeds a little above this the automatic clutch takes hold. On the float chamber is a sight feed glass, so that shortage of gasolene may be seen from the seat. This trouble often arises, and is not quickly recognized. There is an automatic air inlet, so designed that the tension of the spring changes with the demand made on the carburetter. This part embodies the result of many brake tests made to study carburetters alone with an engine kept and used for the purpose. Some of the better established makers would do well to follow this scheme of learning instead of guessing or copying, as they are doing now. A good brake test will teach more in an hour than all the road



STURTEVANT MOTOR.

trials, with varying conditions, will teach in a week.

Ignition is accomplished by two magneto generators, one for each three cylinder engine. The advance of spark is made by the simple controlling lever that does everything else and which will be described. As a matter of fact, one side of the engine may be run as a three cylinder engine. It should be noticed that by the arrangement of cylinders described this engine with six cylinders is only as long as the ordinary engine of three cylinders of the same dimensions. The crank shaft is short and compact, with three bearings.

The flywheel of the engine is immediately in the rear of it and of the usual shape and dimensions. Within it is probably the most interesting feature of the whole car. At least it certainly leads to the most interesting results in the way of ease of control and flexibility.

This feature is what may be rightly called an automatic clutch. It is operated by the centrifugal force exerted by nine weights, and the action of the clutch is therefore directly affected by the speed of the engine. Within the flywheel are a series of steel plates. Half of these are attached to the flywheel proper on the outside rim of it. The other half (and alternate plates) are fastened to one of three concentric shafts extending into the change gear box.

There are three changes of gear forward and a reverse. There are therefore three groups of the alternating steel plates, one group of eight fastened to the hollow shaft having on it the low gear, a second group of six plates carrying the middle gear, and a third group of four carrying the high gear or direct drive.

The action of this clutch is as follows: At a speed of about three hundred revolutions per minute there is centrifugal force enough to cause the pivoted weights to compress the first group of eight plates and throw into action the low speed clutch. This requires a motion of about one-sixteenth inch, the plates attached to the flywheel being pressed against those attached to the low speed shaft. There is nothing sudden about the clutch, as it runs in oil, which insures a gradual tightening. Each group of plates has a set of six springs holding them apart normally. This spring tension is overcome by the centrifugal force of the weights.

If the engine continues to accelerate the force of the weights increases with the square of the speed, and the second set of plates is compressed, throwing in the middle gear, the change being gradual and imperceptible and automatic. Another sixteenth of an inch does this. With further increase the high speed direct drive is thrown in, and any further acceleration produces no further effect on the plates in the clutch. If a hill or other conditions requiring strenuosity is met and the engine slows down, the lower gears come into action because relieved from the strong pressure produced by centrifugal force. If congested traffic is met and the engine is throttled down, the engine returns automatically to the lowest gear and even releases the clutch entirely, the engine running on the governor. There is no knowledge as to which gear is doing the work at any given moment except as may be judged from the speed of the car. No shock or noise is perceptible.

The only control of the car is in one foot pedal. The engine, being started by cranking, begins to run on the governor. The first pressure on the foot pedal, or button, opens the throttle wider and causes the engine to accelerate. Each gear takes hold in turn, and the throttle is finally wide open. During this time the spark has been advanced with the opening of the throttle and by the motion of this same foot button. When the throttle is wide open the pedal still has about another inch of travel not exhausted. This is used for the extreme advance of the spark when the maximum speed is demanded. In climbing a hill this must be borne in mind by the driver, as the tendency is to push the throttle wide open to get the most power when as a matter of fact the extreme advance of spark is all that can be obtained at the end of the stroke, with a tendency to lose power and cause the engine to knock, because the spark is too far ahead and the explosions are premature.

The reverse speed is brought into action

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by a foot pedal that engages a disk clutch in the gear box, which in turn brings into action an idle gear, simply reversing the action of the low and middle speeds, giving two gears reverse.

If the action of this clutch is studied it will be seen that it is not possible to stall the engine, as is the case by letting in an ordinary clutch too quickly or on a side hill. This is because the moment the engine slows to a dangerous point, and quicker than could be done by foot pedal, the clutch is entirely released and the engine picks up speed again and goes ahead. In other words, the clutch is quicker and more sensitive than the hand or foot.

The question will be asked as to how much torque is available on the low speed to help the car out of a ditch or over some other bad obstruction. It has been seen that the middle and high gears come into action when the engine reaches a respectable speed. It is a fact that an engine develops its maximum horsepower at a comparatively high speed. Therefore it would seem that there would be only a small part of the horsepower available in connection with the use of the low speed clutch. As a matter of fact, it has been found by experiment with these engines that the maximum torque is exerted at a speed about coincident with the engagement of the low speed gear.

Plans are also made for small and underpowered machines to attach a device in the way of a simple lever that will hold the automatic clutch out of action in extreme cases where the full power of the engine is needed on the lower gear.

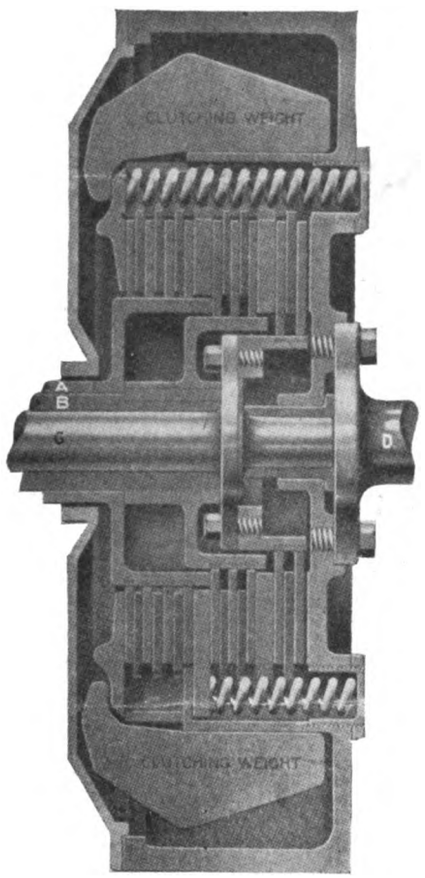
There is one startling and very worthy novelty in the power brake attached to the low speed shaft of the gear change. A friction disk brake (on the same plan as the clutch) is attached to the shaft mentioned. There is a leather disk in a cylinder so arranged as to tighten the disks when pressure is let in back of the leather piston. When the control button is entirely released and rises to the top of its stroke, it allows pressure from the working end of one of the cylinders to enter the brake cylinder and applies the brake. It makes no difference whether the pressure is the result of the explosion or the compression. Pressure applies the brake, and there is a safety valve on the cylinder of the brake to prevent excessive pressure. The first motion of the control button closes the connection between brake cylinder and engine cylinder before opening the throttle and starting the car. In addition to this brake is a powerful foot brake applied at the rear hubs in the usual way. The tires may also be inflated by the pressure from this same cylinder.

The gasolene is under a bonnet at the front end and is connected with a gauge glass within the dash back of a plate glass and in full view of the driver. The amount of gasolene in the tank is always plain to see. Beside this glass is another connected with the water supply of the cooling system. The radiator or cooler is in the usual place, the pump of centrifugal type distributing water to both sides of the engine.

Under the bonnet are also the two igniters, each with its own spark coil. The oiling system is within the dash and of the pump type. The oil supply being in a tank within the dask and above the oil pump.

Taken altogether, the car shows much study, and it has been developed into a fine car, a little out of the accepted arrangement, but one very easy to operate. The construction is good and strong, and it may be added

STURTEVANT CLUTCH.



A. Low Speed.
B. Intermediate do.
C. Direct Drive.
D. To Engine.

that ball bearings are used throughout of the most approved type.

SOUTHER ON THE GASAULEC.

Since the beginning many attempts to produce an automobile combining the flexibility of the electric in the way of control and manipulation and the wide radius of action and independence of the gasolene machine have been made, and, for that matter, are now being made.

Up to the present moment the underlying idea has been to install a gas engine on the vehicle, arrange it so that it may generate electricity by means of an ordinary electric generator and then use this electricity through motors to drive the car. In other words, an electric automobile generating its own electricity, instead of carrying batteries. Such a combination, up to the present time, has lead to much complication and little mechanical efficiency.

In the "Gasaulec" car, which made its formal debut at this show, a new idea in the combination of a gasolene engine, electric generator and motor with storage battery, makes its first public appearance. This sounds more complicated than the older forms referred to. As a matter of fact, this proves not to be the case, as the method of application is so different. The electric power is used for auxiliary purposes only, and in such a way as to greatly simplify the manipulation and control of a gasolene engine, and yet the car remains primarily a gasolene car.

It will be naturally thought that all this must have been accomplished by large increase of weight over and above what a simple car should weigh having similar horsepower. This also is not true, as the Gasaulec with a 40-horsepower engine weighs but about 2,250 pounds, batteries included.

This car is made by the Vaughn Machine Co., Peabody, Mass., and for two years it has been in the works and on the road, so that it may be accepted as a ripened experiment at least.

The engine is a four cylinder copper water jacketed vertical one, of excellent dimensions and appearance. The valves are entirely novel, certainly as applied to automobile construction. There is a double exhaust, that is, a port at the bottom of the stroke uncovered by the piston and the regulation exhaust valve at the top of the stroke. The exhaust valves are double seated and electrically controlled by means of a magnet. Because of the double seat the valve is nearly balanced, with a slight tendency to close. The magnet, with pull of some 30 or 40 pounds, is used to only small portion of its capacity. The timing of the exhaust is alterable, but regulated by the builder once for all, so that the driver need not know anything of it. With increase of speed the timing is changed and simultaneously also the spark is advanced. In this way the utmost demands of speed are met.

The inlet valves are also magnetically operated. The fuel supply to the engine is entirely regulated by the timing of these valves. There is no throttle connection with the carburetter. The valves are closed at such a time as to retain much or little fuel to give much or little power. The valves being operated in this way, all necessity for a half time shaft or cam disappears. There is none.

There is no pump, as the engine is cooled by the thermo-syphon system, using, very wisely, exceedingly large circulating pipes. The cooling fan is driven from the crank shaft by means of spiral gears, in combination with a friction slip device. The same shaft turns horizontally rearward to the dash and operates the timing of the ignition.

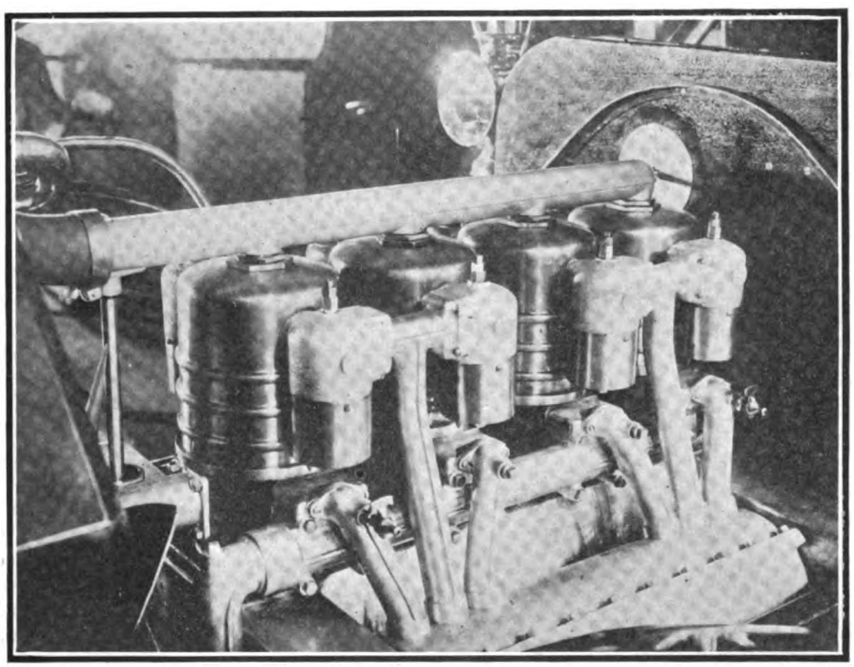
At the rear end of the crank shaft is the flywheel. At the front end is nothing, no starting crank being necessary. Behind the flywheel are two cardan joints in the propeller shaft. This shaft connects with bevel gears, the multiplication being three to one,

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the resulting speed being about 48 miles an hour.

Thus far the machine is like any 40-horse power machine, minus clutch and system of sliding change speed gears, in respect to arrangement of motive power.

Against the front side of the flywheel is a spur gear about 15 inches in diameter. This spur gear is so wound as a magnet that it forms a magnetic clutch operated at will by the driver. This meshes with a pinion about three inches in diameter, giving a multiplication of five to one. The pinion is on the shaft of a standard electric motor of about 2-horsepower, normal load, which sustains an overload for a short time of 8-horsepower.



GASAULEC ENGINE.

The construction is such that the motor is integral with the crank case of the engine.

To drive this motor there is installed under the rear end of the tonneau twenty cells Exide P. V. 5 batteries. The motor is so wired that it may become a generator and always keep these batteries charged. The use of the generator is automatic and controlled by a centrifugal governor in order that the batteries may never receive a charge at too high a rate.

The control of the car is through a controller operated by a foot pedal. The driver has no task except to steer and apply the brake. The cycle of operation of this controller is the most interesting feature about the car; it sounds complicated, but in operation is as simple as the movement of any lever and produces one after the other the following cycle of operations:

The car being at rest, the inlet valves of the engine are lifted and held open, the lever being at neutral. Backing follows a short rearward motion of the lever, the work being done by the electric motor. The engine also turning idle. The first movement forward of neutral operates the electric motor ahead, with the engine's valves still held open and the car moving seven or eight miles an hour. Under this condition the car will run several miles. The next movement forward applies the spark and allows the inlet valves to operate under the influence of suction, and being timed by the magnets. The gas engine now is in normal operation and pulling on the car with the motor. The controller next throws off the motor as a motor, and it is converted into a generator. 'Way forward the inlets lag less or remain open longer, in other words, and the car goes forward at full speed under the influence of the gas engine only.

On sharp hills, and with heavy loads, both gas engine and motor work together. With the moderate gear ratio adopted for all round touring, it has been found that the combined effort of both motors will mount any hill. The motor (gas) is so timed as to develop its full torque at comparatively low speed and thus be able to pull with the electric motor to a large percentage of its full power. With the multiplication of the electric, there is therefore available for a short time some sixty or seventy horsepower.

The timing of the valves and spark is by means of a rotary distributor on the back of the dash. This is connected with the controlling pedal, so that both spark and valves are timed together, in fact, it is seen that everything is controlled by the one lever.

Stepping into the car at a standstill, it is started as an electric by the movement of a lever, then it becomes a gasolene car of high power and remains so until very low speed is demanded again.

Stopping and starting in the crowded city street or on the country road to quiet a frenzied horse ceases to become in the least degree troublesome. Many more women would run cars if it were not necessary to crank them. This is a car that starts itself.

The independent operation of spark and timing of the valves must allow of the utmost economy of fuel. Careful test and experiment will teach the best setting, and as the timing of the valves is not limited or controlled by a half time shaft, the best setting for every speed is possible. The objection is raised that the valve magnets must overheat, being located so near the explosion chamber of the engine. This difficulty has not been met in the least degree.

The car is supplied with an ordinary set of rear hub brakes, and also uses its electric power and motor as a brake. The workmanship shown is most excellent, and no pains are spared to obtain the best of materials for the cars. Nickel steel in the highest degree of heat treatment is freely used in the vital parts of the machine.

Altogether the car is one of unusual interest, and one that must necessarily claim much attention. In outward appearance there is nothing to distinguish it from many others of a similar size, the detail described being of much more interest than the car as a whole.

ARIEL CONTRIBUTES INNOVATIONS.

One other new comer at the show is the Ariel, presented by the Ariel Motor Car Co., of Boston, which, though not startlingly radical, embodies several distinctly exclusive features.

It is equipped with a system by which the cylinders are either air or water cooled at will—that is to say, the cylinders are interchangeable and either system may be used at the discretion of the owner, or according to the demands of the season. In the air cooled arrangement the cooling fan is placed in the dashboard, and hence the draught is induced instead of being forced, as is more commonly the case. The openings in the hood are also provided with deflecting fins, which direct the incoming air upon the cylinders.

The general construction of the motor is not unusual—four cylinder, vertical, mechanically actuated valves in the heads, and so on. The rating is 22 horsepower.

The sliding gear system of transmission is used, with three gears forward and a reverse; the high speed is by a direct connection, and all the pinions are of large diameter and have 6-pitch teeth. An interlocking device is employed that is claimed to effectually prevent stripping of gears. In designing the gear box, and the crank case as well, all corners have been avoided and rounded surfaces substituted, thus doing away with the danger of flaws in the casting. The drive to the wheels is by a cardan shaft, and the rear axle is so constructed that the differential can be inspected by taking out two nuts, and even removed without disturbing the axle itself.

The frame is of presed channel steel, with dropped cross ties. The spring suspension is

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DIAMOND TIRES IN A MOORISH SETTING.

semi-elliptic in front and full at the rear. The tread is standard; wheelbase, 100 inches; wheels, 32 inches in diameter, fitted with 3½-inch tires.

The body equipment is a well drawn side entrance, and the top speed is said to be forty miles an hour.

BERKSHIRE'S NEW TRANSMISSION.

Another car which made its debut is the Berkshire, made by the Berkshire Automobile Co., Pittsfield, Mass. Its chief talking point is the new individual clutch transmission, of which the makers are very proud, for there is not a bolt, pin, nut or screw used in its mechanism. The gears are constantly in mesh, and the clutcues are internal, hence the affair is compact; and as the gears are wholly submerged in oil, they are silent in action; and, of course, the control is very flexible. It is also easy to take down and assemble and simple to adjust.

The motor is of the individual four cylinder vertical type, with jacketed valve seats on opposite sides. The connecting rods are of crucible steel, and the crank shaft is provided with five bearings. Jump spark ignition is used. The valve springs are incased by sliding sleeves, and the cam shafts are driven by fibre faced gears meshing with a bronze driving pinion.

An addition to the steam class, the Morse, made by the Morse Motor Vehicle Co., was also due to make its first appearance. But to date, although the sign is in place, the car itself is still missing.

Excepting the displays of boats and their motors and "fixings," the exhibits and exhibitors are as follows:

Burke, W. W., Boston, mgr. Electric Vehicle Co.—Columbia cars.

MacAlman, J. H., Boston, mgr. Locomobile Co. of America—Locomobile cars.

Brown, George M., Boston, agt.—Apperson cars.

Fuller, A. T., Boston, agt.—Cadillac, Packard and Northern cars.

Fosdick, Harry, Boston, mgr. Winton Motor Carriage Co.—Winton cars.

Gilmore, E. A., Boston, mgr., T. B. Jeffery & Co.—Rambler cars.

Reed-Underhill Co., Boston, agts.—Knox and Stearns cars.

Breed, E. S., Boston, agt.—Haynes cars.

Lowe, George H., Boston, mgr. White S. M. Co.—White steam cars.

Oldsmobile Co. of New England, Boston—Olds cars.

Masters & Co., W. C., Boston, agts.—Wayne cars.

Snow, H. M., Boston, agt.—Acme cars.

Bangs, A. R., Boston, agt.—Baker electric and Franklin cars.

Morrison, A. E., Boston, mgr. Peerless Motor Car Co.—Peerless cars.

Foss, W. J., Boston, mgr. Pope Motor Car Co.—Pope-Toledo, Pope-Hartford, Pope-Tribune and Pope-Waverly cars.

Skinner, K. A., Boston, agt.—De Dion, C. G. & V. and other foreign cars.

Williams, P. A., jr., Boston, agt.—Ford and Marion cars.

Moore & Smith, Boston, agts.—Autocars.

Woodward, H. M., Boston, agt.—Country Club cars.

Dowling & Maguire, Boston, agts.—Pierce cars.

Ridlon & Co., Frank, Boston, agts.—Yale and Elmore cars.

Sturtevant Mills Co., Boston—Sturtevant cars.

Lane Motor Vehicle Co., Poughkeepsie, N. Y.—Lane steam cars.

Boston Automobile Exchange, Boston, agts.—Phelps and Reliance cars.

Linscott Motor Co., Boston, agts.—Corbin, National and Reo cars.

Stanley Motor Car Co., Newton, Mass.—Stanley steam cars.

Upton Motor Co., Lebanon, Pa.—Upton cars.

Crest Mfg. Co., Dorchester, Mass.—Crest-mobiles.

Vaughn Machine Co., Peabody, Mass.—Gasaulec cars.

Hills, Horace B., jr., Boston, agt.—Mercedes cars.

Henshaw, C. S., Boston, agt.—Thomas cars.

Dunham, George J., Boston, agt.—Royal Tourist cars.

Lewis, Ralph C., Boston, agt.—Ariel cars.

Bennett, A. L., Boston, agt.—De Dietrich cars.

Union Automobile Co., Oakdale, Mass.—Union cars.

Randliff Motor Car Co., Boston, agts.—Panhard, Maxwell and Stoddard cars.

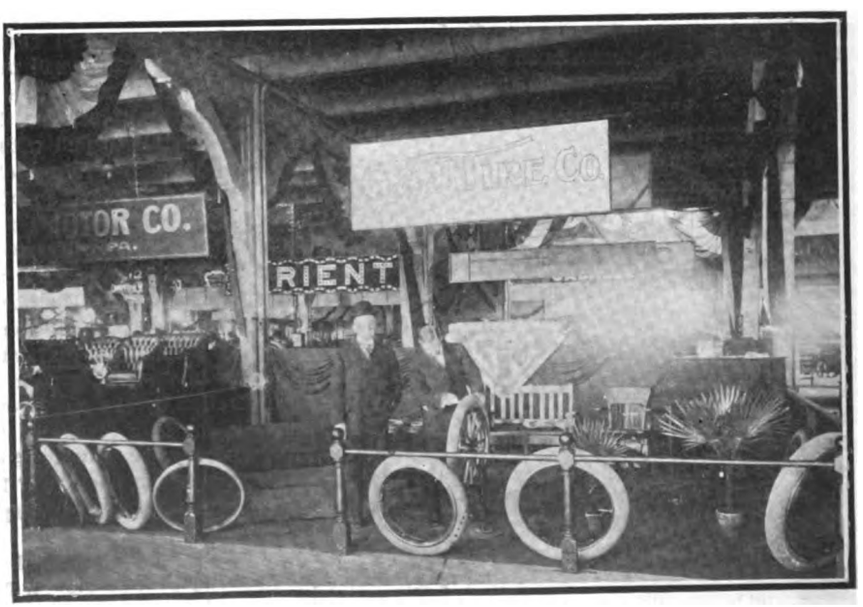
Prescott Automobile Co., New York City—Prescott steam cars.

Napier Motor Co. of America, Boston—Napier cars.

Matheson Motor Car Co., Holyoke, Mass.—Matheson cars.

Berkshire Automobile Co., Pittsfield, Mass.—Berkshire cars.

(Continued on page 1216)



G & J TIRE BOOTH.

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A. A. A. DEALS OUT SURPRISES

Names Morrell for Racing Board and Batchelder for Secretaryship—Morrell's Views.

Although the name of Morrell has never appeared in the records of any of the race meets, nor figured prominently in any of the A. A. A.'s political stresses, that is the name which now heads the organization's racing board.

Robert Lee Morrell is the full cognomen, and it stands for a New Yorker a trifle below size and of serious aspect—until he begins to speak, for he is really very jolly—who wears glasses, and is perhaps 35 years old. He is of the law firm of Morrell & Bates, and is reputed to be "well fixed," as they say up State. Moreover, he has a penchant for touring, and his selection for the chairmanship of the racing board proved an unmitigated surprise.

He formally assumed his new role at the regular meeting on Tuesday afternoon, and his first dictum was to the effect that the qualification for team places must lie absolutely at the discretion of the national organizations, which are to be represented.

He would leave it with the Automobile Club of France to decide whether an elimination trial for French candidates for the cup will be necessary, whether that trial shall take place in France or America, and if in the former, whether recognition shall be given French racing cars already here.

Other matters pertaining to the Vanderbilt race were discussed and acted upon, and it was decided to arrange if possible a track circuit for the racing season—a proposal made necessary because of the many requests for reservation of dates. The Empire City Club applied for five days, and the Brighton Beach Club for four, but only the first dates of each were reserved; that is to say, May 6, for Brighton Beach, and May 30, for the Empire Track. The granting of sanction for the proposed Lakewood road races slated for April 10, was deferred pending the obtaining of the legal permit from the local authorities.

The proposed revision of the racing rules was taken up at some length, and the name of E. R. Thomas added to the racing board and also to the committee on revision, which now has four members, Messrs. Hilliard, Bowden, Birdsall and Thomas. The chairman of the board has written all of its members for suggestions, and their replies will be considered at a final meeting of the committee to be held early in next week.

When Mr. Morrell was questioned by a representative of Motor World as to his standing in the matter of amateur-professional classification, he said:

"Well, that's a much mooted question, and I don't know how it will be decided. But personally I am not in favor of making any distinction in the matter, at least not for the present, because I think it would simply be opening the door to a great deal of dissatisfaction.

"You see, there is a class of pure professionals, and a class of pure amateurs which are easily separated, but there are the manufacturers whose motives may be either those of the one or the other, or a combination of the two, and cannot well come under either category.

"As far as I am concerned," he continued, "I should not in the least object to racing against either Mr. Rollin White or Mr. A. L. Riker, for instance, for they would both be courteous opponents, though I really think I could drive better than either of them, and I know I've driven more miles! But there might be other manufacturers who would be less desirable competitors. Then, too, some company might take up Mr. Jones, just to suppose a case, Mr. Jones being known all over the world as a skillful professional driver, and say, 'Here, Jones, we'll make you our superintendent of tires at a salary of $3,000 a year.' Then when it came time for a race, Mr. Jones would drive such and such a car as an employe of the firm. Possibly in another year some sort of separation will be necessary, but at the present time I think an amateur definition would be productive of more harm than good."

Following close on the heels of Mr. Morrell's appointment as chairman of the Racing Board, the A. A. A. handed out an even greater surprise when it became known that overtures had been made to A. G. Batchelder, of New York, to assume the joint secretaryship of the racing board and of the organization itself. It was not at first credited, but is now known to be true, and, furthermore, that Batchelder has accepted the dual position. He will assume office probably on May 1, when the present secretary of the A. A. A., C. H. Gillette, had let it be known that he would retire.

Batchelder is at present editor of Motor, and has long been a member of the newspaper craft, chiefly in the sporting departments. He was prominent in League of American Wheelmen racing circles, and after that body relinquished control of racing he helped organize and became chairman of the National Cycling Association, of which he is now president. He will relinquish this office and also all journalistic connection when he becomes secretary of the A. A. A. For a while he figured as chairman of the so-called racing board of the American Motor League, which board finally dried up and blew up when he ordered that the use of his name be discontinued.

Steck Succeeds Himself.

At a meeting in Daytona, Fla., on Thursday of the Florida East Coast Automobile Association Edward M. Steck was re-elected president; H. G. Hunnewell, acting secretary, and F. M. Conrad, treasurer. The directors are H. L. Bowden, William Wallace, E. R. Thomas, F. E. Bond, J. B. Moore and J. W. Wilkinson.

John D. Rockefeller has presented his wife with a new 40 horsepower Rambler of the limousine type.

HOTCHKISS IS RENOMINATED

Buffalo Man Will Again Head New York Association—Taxation is Discussed.

W. H. Hotchkiss will undoubtedly succeed himself as the president of the New York State Automobile Association. The directors held a meeting at Buffalo last Friday, and the following nominations were made: President, William H. Hotchkiss, Buffalo; vice-president, Oliver A. Quayle, Albany; secretary and treasurer, Frederick H. Elliott, Syracuse. The annual meeting and election will take place in Syracuse this month.

Reports submitted at the meeting on Friday showed that the organization has nearly reached the two thousand mark in membership and is rapidly growing in size and influence. The Automobile Club of Elmira was admitted to membership, making thirteen clubs in the organization.

Considerable discussion was devoted to legislation now before the State Senate and Assembly affecting automobilists, and the following resolution was adopted:

"Resolved, That the committee on legislation be instructed to investigate and report at the next regular meeting:

"First—Whether any plans for taxation of motor vehicles involve the exemption of such motor vehicles from all other taxation; and,

"Second—Whether the avails of such taxation will be used exclusively for the maintenance of good roads."

Whether the association will oppose the proposed State automobile tax law depends upon the answers to these questions. It was decided yesterday that a committee should be appointed to investigate and report upon this matter.

Much satisfaction was expressed at the failure of the Senate Committee on Internal Affairs to report favorably on the Saxe bill, which proposes to make a violation of the motor vehicle law punishable by sentence to jail for the first offence. It is believed that the bill will be killed in the Senate.

Those present at the meeting were W. H. Hotchkiss, of Buffalo; Frederick H. Elliott, of Syracuse; A. H. Knoll, of Buffalo; H. W. Smith, of Syracuse; A. J. Baechle, of Utica; H. S. Woodworth, of Rochester, and O. A. Quayle, of Albany.

Test Cases Not Yet Ready.

Arrangements are progressing smoothly for the projected legal tests of the constitutionality of the license laws, but as yet the actual arrests preliminary to bringing the matter into court have not been taken. When interrogated on this point Counsellor Terry, who has the matter in hand, replied that papers were being drafted by him to cover every possible point in dispute that could arise, but that no offenders had been haled to the lock-up for not displaying license numbers or for other violations which will be committed.

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DEALERS AND CLUBMEN MEET

They Discuss Chauffeurs and Commissions, and Bring Out Some Interesting Information.

"One of the great sources of commercial pollution is the giving of gifts by the purchaser to the agent of the seller or by the seller to the agent of the buyer. Transactions of this kind are characterized by two features; they involve an attempt to serve two masters, and they are secret. For both reasons they are bad, but the greatest evil is their secrecy. In some cases masters are aware of the presentation, but even so such a transaction is bad, because no man ought to consent to a practice which renders faithful and single-eyed service by his employe more difficult."

These words of Sir Edward Frey, uttered in connection with a discussion of the principles of commercial morality, aptly express the motif of the discussion which took place at Tuesday evening's informal meeting of the Automobile Club of America. The subject announced was "The Garage and the Chauffeur." The members of the New York Automobile Dealers' Association were the guests of the evening, and the function took the form of a heart to heart interchange of views as to the management of that most expensive functionary, the grafting chauffeur.

Former President Shattuck, in opening the debate, for debate it was, explained that the club's purpose to conduct a garage in conjunction with its new clubhouse is twofold. In the first place, the machines being kept in the same building as the club quarters, a larger daily attendance of members would be secured than would otherwise be possible, for so it has worked out in Boston and other places where the scheme has been tried; and, second, it is hoped that by having the care and stabling of the cars directly under the eye of the club officials the evil of the commissioned chauffeur may be stamped out. The dealers and garage owners were, he said, so well qualified to judge of the importance of the evil, and to suggest means for its suppression, that it had been deemed fitting that they come together informally to discuss ways and means and, if possible, arrive at some definite conclusion in the matter.

W. P. Kennedy, on whom he called as secretary of the dealers' organization to voice the dealers' attitude, explained:

"Many owners, feeling possibly their own technical incompetence, or being filled with business cares, prefer to deal with the chauffeur rather than to come directly into contact with the dealer. Often, too, his faith in the former as his own expert employe is so strong that he sides with him and permits himself to become prejudiced against the latter in case of any difficulty that may have arisen. The chauffeur's power is, then, very great, and we find ourselves obliged to give them commissions on the sale of cars, and, not only that, but we must give them a percentage on bills for supplies and a percentage on all repair bills, and we even find ourselves called upon to contribute $5 to $10 a month for the mere privilege of having the car stored on our floor. Hence the responsibility rests largely with the owners themselves; and, though the conditions react on us as well, it is they who suffer most in the end."

Mr. Shattuck, taking up a mild defence of the commision system, referred to its prevalence in France particularly, where it extends to all branches of servitude. He pointed out the almost universal practice of giving commissions to coachmen in this country, and the apparent necessity of it, since if it be refused the horses go lame, the varnish peels off the carriage and the harness leather cracks most mysteriously. Turning to the automobile driver, he showed how he had naturally drifted into a similar attitude toward the owner and the dealer, only since the automobile has been largely, and is yet to many an owner, a complete mystery, his temptation to fraud had been very great.

Speaking of the qualifications of the driver, Mr. Shattuck voiced what afterward proved to be the general opinion when he said that in his situation, the ability to dissect a motor and spread its parts all over the floor is not at all a requisite. He should be, first of all, a competent operator, and be able to make all ordinary running adjustments, but further than that he need not go. Moreover, he should be able and willing to wash the car and care for the brass. His own experience, had proved this, he said, for his best chauffeur had been a man—his valet—whom he had had trained by a French expert at $2 a lesson, and who not only took the entire care of the machine, but kept it in flawless condition.

In the matter of wages, it was the general opinion that the chauffeur is paid at a rate wholly disproportionate to the real value of his work; the same man in other lines of work could hardly earn two-thirds of his present salary alone, and the additional income from commissions, made his remuneration scandalously high. One particular case was cited in which a chauffeur received a regular salary of $250 a month, and a bonus of $250 a month if the car ran faultlessly—$6,000 a year in all and equivalent to the salary of a bank cashier. This custom of paying high salaries to drivers, forces the garage owners and repairmen to pay high rates to their mechanics, to prevent their desertion to the chauffeur's life just in the busy season, which, in turn, must raise the cost of repairs and again react on the owner.

Of the several members of the trade who spoke, among them Messrs. Plummer, Andrade and Haradon, some admitted a forced recognition of the chauffeur's claims, and others denied it, but all agreed that it was a growing evil and a detriment to their business.

An evil which comes up again and again is the man with a bad record, who, discharged from one place, readily obtains employment in another through misrepresentation. This seems particularly true of those who are wont to get drunk and to take out the car without the owner's knowledge. Various checks on this have been tried, but with doubtful success. The dealers' association has a system in use which serves as a check on the re-employment of the unsatisfactory man, which works very well, but to keep account of the doings of the unfaithful man is less easy. For if, for instance, the owner is at once informed of all repairs, he complains because his bill is not sent in at the end of the month. While, if a record is sent him of all the comings and goings of his machine, he considers it a comment on the extent of his use of the car, or even as an imputation on the faithfulness of his servant.

One of the club members present referred to the owner as being ground down between the upper millstone of the chauffeur and the nether millstone of the dealer or garage proprietor till he was forced to submit to rank extortion, whereupon Mr. Shattuck laughingly retaliated that the owner's salvation must then lie in a reversal of conditions; in getting the chauffeur between the upper millstone of the owner and the nether millstone of the dealer, and so grinding him down that he would be forced to come to reason.

Mr. Andrade, one of the last speakers, forsibly summed up the situation in this way. The dealers, forced by trade conditions to pay certain fixed prices for their goods, obliged to pay high rentals for their buildings, forced to pay high wages to station employes because of the tendency for them to desert in the driving season, and driven by competition to regulate their final charges to certain limits, are greatly oppressed by the commission system, for he said: "Suppose a job costs us just $100. We charge $125 to the owner and pay the chauffeur 10 per cent. That $12.50 is just one-half of our profit. Yet we must pay it uncomplainingly, or else the job is condemned." In conclusion, he said: "We, the dealers, are ready and willing to co-operate with you, the owners; we appreciate the magnitude of the evil; we even suffer more from it than you do, and we will do anything in our power to root it out—if you will only tell us what to do. For we cannot act without your help. If you will suggest a plan, I feel sure you will find us, one and all, ready to accede to it, and to abide by it."

The wisdom of definite co-operation between the dealers and the club was pointed out, but no final action was taken.

A. L. Shattuck, chairman of the building committee of the Automobile Club of America, has added not a little to the gayety of New Jersey by formally notifying the Murphy Varnish Co. that there will be no Murphy varnish used on the new clubhouse!! The Murphy concerned was formerly the Governor of that State, who, when retiring from office, recommended that automobiles be so "hobbled" that they cannot go faster than twenty miles an hour.

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Climbing One of Boston's Steepest Streets.



There are some stiff hills in and about Boston. The picture shows a party of five in a 30 horsepower Pope-Toledo touring car climbing one of them—a grade of 16 per cent—on the second speed. The road was in bad condition, and it is so located that it was impossible to get a start up the hill. It has to start almost from a standstill as it turned the corner. The grade is 625 feet long. In the car were A. W. Pope, J. C. Kerrison, Arthur Hoy and Freeman Hinckley, assistant manager of the Pope Mfg. Co.'s branch in Boston.

Michigan Motorists Score a Point.

Michigan automobilists have won a victory in their fight against the Holmes bill, on which a protracted hearing was held last week. The act in its original state fixed the speed limits at fifteen miles an hour in country districts, in cities at ten miles an hour in residential sections, and six miles an hour in business portions. Every car must be licensed with the Secretary of State. The automobile clubs have induced Mr. Holmes to change the speed limits to twenty, fifteen and ten miles, respectively.

Representative Ladner has introduced an automobile bill also. Ladner would have all the owners of cars take out a dollar license with the county clerk, after which they must affix their names and residences on the machines in letters two and a half inches high. No speed limit is mentioned in the bill, but owners are held responsible in law for damages caused by their carelessness. It has been referred to the Committee on State Affairs, where it will likely be smothered and the Holmes bill be advanced for passage.

Mobile's Mardi Gras Parade.

An automobile flower parade, attempted for the first time by the Mobile (Ala.) Automobile Club, was the feature of the Mardi Gras carnival. Fifteen elaborately decorated cars were in the parade. The first prize, $100 in gold, was awarded to Mrs. George S. Leatherbury. Her car was a study in blue, the blue lotus being the decorative flower. Four young ladies, attired in blue and carrying blue parasols, gave an added charm to the effect.

Illinois Legislator Frames a Fool Bill.

Illinois has still another bill to regulate automobiles in the State before its legislature. Representative P. P. Schaefer, of Champaign, is its sponsor. It is of the assinine variety, providing that when meeting a horse the automobile shall be brought to a full stop within fifty feet of the animal, and before attempting to pass any horse the driver of the car must sound the horn, or bell, until the attention of the horse driver is attracted.

Another section of the measure provides that the owner as well as the chauffeur of the car shall be liable for all damages done by the unlawful driving of the car. In suits to recover such damage a prima facie case shall be made out upon proof of the injury and proof that the car was being driven in a manner contrary to law.

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BOSTON SHOW AN EYE-OPENER.

(Continued from page 1212)

Indian Motorcycle Co., Boston—Indian motorcycles.

Amsden, F. D., Boston, agt.—Cameron cars.

Wing, F. E., Motor Car Co., Boston—Queen and Marmon cars.

Morse Motor Vehicle Co., Springfield, Mass.—Morse steam cars.

Blake Co., E. P., Boston, agt.—Marsh and Jackson cars.

Nichols & Co., D. P., Boston, agts.—Frayer-Miller cars.

Jenkins & Sheldon, Exeter, N. H., agts.—Mitchell cars.

Eastern Motor Vehicle Co., Boston, agts.—Premier cars.

Moore & Smith, Boston, agts.—Compound cars.

Smith, Benj. A., Boston, agt.—Studebaker cars.

Iver Johnson Sporting Goods Co., agt., Boston—Duryea and Stanley cars.

Boston Automobile Exchange, agt., Boston—Reliance and Phelps cars.

Chester I. Campbell, Boston, agt.—White and Columbia cars.

Clarke & Co., Ed. S., Dorchester, Mass.—Clarke steam cars.

Ariel Motor Car Co., Boston, Mass.—Ariel automobiles.

Bennett, A. L., Boston, Mass., agent for De Dietrich cars.

Veeder Mfg. Co., Hartford, Conn.—Veeder odometers, tachometers, etc.

Angier Co., Boston, Mass.—Accessories.

Diamond Rubber Co., Akron, Ohio—Diamond detachable clincher tires.

G & J Tire Co., Indianapolis, Ind.—G & J detachable clincher tires.

Wilkinson & Co., A. J., Boston, Mass.—Accessories.

Goodyear Tire & Rubber Co., Akron, Ohio—Goodyear detachable tires.

International A. & V. Tire Co., Milltown, N. J.—Tires.

Rose Mfg. Co., Philadelphia, Pa.—Lamps.

Hartford Rubber Works, Hartford, Conn.—Perfected Dunlop detachable and Hartford clincher and Turner solid tires.

Gray & Davis, Amesbury, Mass.—Headlights and side and tail lamps.

Bowser & Co., S. F., Fort Wayne, Ind.—Gasolene outfits.

Goodrich Co., B. F., Akron, Ohio—Goodrich detachable clincher tires.

Jordan, Marsh Co., Boston, Mass.—Wearing apparel.

Dow Portable Electric Co., Braintree, Mass.—Spark coils, ammeters, etc.

Chandler & Farquhar Co., Boston, Mass.—Gasolene fire pots, vulcanizers, torches and pumps.

Miller, Charles E., New York City—Accessories and supplies.

Alden Spear's Sons Co., Boston, Mass.—Oils.

Webb Co., New York City—Speed indicators.

Teel & Co., Medford, Mass.—Tops.

Bay State Tool Co., Boston, Mass.—Wrenches, punches, etc.

Standard Oil Co., New York City—Gasolene.

Constant Spark Plug Co., Cambridge, Mass.—Witherbee storage batteries and Constant spark plugs.

Lord Polish Co., Cambridge, Mass.—Polish.

Worcester Automobile Co., Worcester, Mass.—

Pittsfield Spark Coil Co., Pittsfield, Mass.—Spark coils.

Morgan & Wright, Inc., Chicago, Ill.—Morgan & Wright detachable tires.

Globe Optical Co., Boston, Mass.—Goggles.

Adwear Auto Tire Sleeve Co., Boston, Mass.—Tire covers.

Willis Co., E. J., New York City—Specialties and accessories.

Iron Clad Mfg. Co., Brooklyn, N. Y.—Sheet iron, gasolene tanks.

Burgin Bros., Springfield, Mass.—Tire cases.

American Coil Co., Springfield, Mass.—Spark coils.

Hjorth & Co., Wm., Jamestown, N. Y.—Wrenches.

Post & Lester Co., Hartford, Conn.—Accessories.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk mechanically fastened tires.

Light Mfg. & Foundry Co., Pottstown, Pa.—Aluminum castings.

Harris Oil Co., A. W., Providence, R. I.—Lubricants.

Ireson Leather & Export Co., Boston, Mass.—Leather treads.

Herz & Co., New York City—Electrical ignition apparatus.

Splitdorf, C. F., New York City—Spark coils, etc.

Twentieth Century Mfg. Co., New York City—Lamps.

Shuman & Co., Boston, Mass.—Clothing.

Boston Gear Works, Boston, Mass.—Gears and pinions.

Consolidated Mfg. Co., Toledo, Ohio—Yale and Snell bicycles and Yale-California motorcycles.

Page-Storm Drop Forge Co., Springfield, Mass.—Forgings.

Atwater Kent Mfg. Co., Philadelphia, Pa.—Battery meters and switches.

Minimax Co., New York City—Fire extinguishers.

Badger & Sons' Co., E. B., Boston, Mass.—Hoods, fenders, tanks, carburetter floats, etc.

Erickson Mfg. Co., Springfield, Mass.—Ericka soap.

Samson Tire Co., New York City—Tires.

Hughes Anti-Friction Co., Charlestown, Mass.—Oils and greases.

Forg, Peter, Somerville, Mass.—Kerosene burners.

Lunkhenheimer Co., Cincinnati, Ohio—Valves.

Warner Instrument Co., Beloit, Wis.—Speed indicators.

Pope Mfg. Co., Hartford, Conn.—Accessories.

Springfield Metal Body Co., Springfield, Mass.—Bodies.

Massachusetts Steel Casting Co., Boston, Mass.—Castings.

Coldwell Lawn Mower Co., Newburgh, N. Y.—Motor lawn mowers.

Lackawanna Valveless Motor Co., Buffalo, N. Y.—Motors.

Curtiss Mfg. Co., Hammondsport, N. Y.—Curtiss motor bicycles.

Devoe-Reynolds Co., New York City—Paints and varnishes.

Pneumatic Mfg. Co., New York City—

Stamford Foundry Co., Stamford, Conn.—Castings.

Standard Wheel Co., Terre Haute, Ind.—Wheels.

Electric Storage Battery Co., Boston, Mass.—Storage batteries.

Whitney Mfg. Co., Hartford, Conn.—Whitney roller chains and standards.

Flexible Metal Mfg. Co., Swampscott, Mass.—

American Machine Mfg. Co., South Braintree, Mass.—Spark plugs.

Parker Lock Switch Co., Newburgh, N. Y.—Parker lock switch.

La Pointe Machine Tool Co., Boston, Mass.—Tools.

More-Power Co., Lowell, Mass.—Automatic air governers, ammeters and electric switches.

Standard Motor Construction Co., Jersey City, N. J.—Motors.

Trenton Malleable Iron Co., Trenton, N. J.—

Lambert-Snyder Vibrator Co.—Vibrators.

Carlyle, Johnson Co., Hartford, Conn.—Friction clutches.

Victor Metals Co., East Braintree, Mass.—Victor non-corrosive silver.

Trebert Auto & Marine Motor Co., Rochester, N. Y.—Motors.

Peter Gray & Sons, Boston, Mass.—Gasolene tanks and lamps.

Ofeldt & Sons, F. W., Brooklyn, N. Y.—Ofeldt automatic water register, kerosene burners, fuel regulators and boilers.

Erickson Electric Equipment Co., Boston, Mass.—Electrical apparatus.

Springfield Moulding Works, Springfield, Mass.—Portable automobile houses.

Murray & Co., P. A., Newton, Mass.—Tops.

Brooks Airless Tire Co., Detroit, Mich.—Tires.

Scoville & Peck Co., New Haven, Conn.—Automatic gas generators.

Valvoline Oil Co., Boston, Mass.—Lubricants.

Atwater & Son, Geo. S., Boston, Mass.—Goodyear tires.

Hodgson, E. H., Dover, Mass.—Portable automobile houses.

Lockhart, W. J., Boston, Mass.—Jacks.

Tingley Co., Charles O., Rahway, N. J.—Tire repair outfits.

Heany Mfg. Co., Boston, Mass.—Oils and polishes.

Peerless Semi-Pneumatic Tire Co., Boston, Mass.—Tires.

Hartford Suspension Co., New York City—Shock absorber.

Gilbert & Barker Co., New York City—

McGlehan Odometer & Mfg. Co., New York City—Odometers.

Bachman Motor Co., Baltimore, Md.—Motors.

Utility Co., New York City—Cleaning compound.

Importers Show a Pitiful Frost.

Boston, March 15.—Frost of an even more frigid variety than that which fell on the similar affair held in New York lays heavy on the co-called Importers' Salon, which opened in Symphony Hall on Monday night. There are about thirty cars in evidence, and the attendants are more numerous than spectators. When a Motor World man visited the place yesterday there were fifteen spectators in the hall; at night the attendance was about one hundred; to-day's count disclosed six visitors. Mechanics' Building was crowded at the same times. There are three American cars mingling with the foreign productions—a Buick, a Stevens-Duryea and a Knox Motor Truck Co.'s truck. Of the imported product it almost goes without saying that the Mercedes was most conspicuous.

Tart Wind-up at Buffalo.

One of the most enjoyable features of the Buffalo show was the banquet of the Buffalo Automobile Trade Association and the Automobile Club of Buffalo last Thursday night in the City Convention Hall. About one hundred and fifty gathered around the festive board. E. R. Thomas, president of the association, acted as toastmaster, and kept the diners in a continuous roar of laughter by his witticisms. After the banquet it is said there was a pretty pert show for the benefit of the "limited few."

The recently organized Kirkham Motor Mfg. Co., of Buffalo, N. Y., began operations last week. The company starts out with a payroll of fifty names.

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TO DISPLACE THE CRANK

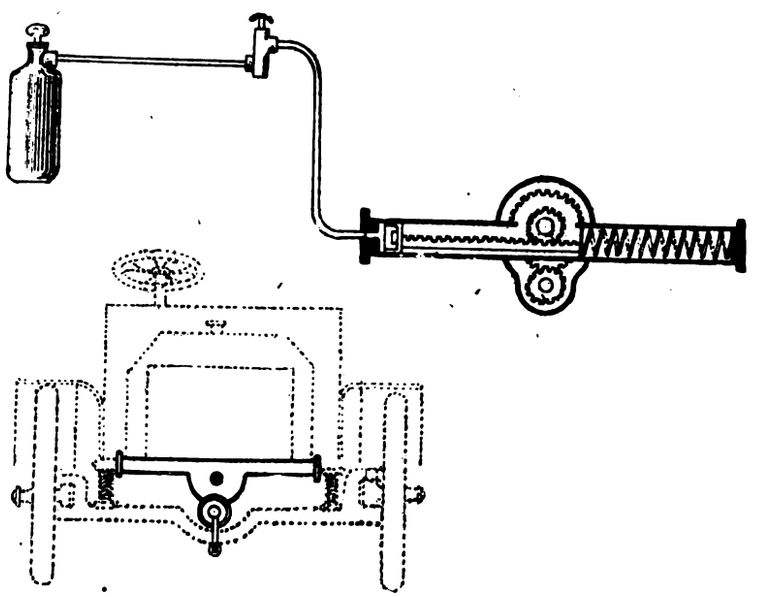
Ingenious Use of Carbonic Acid Gas to Render Engines Self-Starting.

Of all the many schemes and devices of questionable merit designed with a view to permit of the engine being restarted from the seat without the necessity of dismounting and winding the crank, few seem to have survived their first season.

Of those that remain, the principal one can hardly be said to fall under either category. It is, in fact, neither a scheme nor a device, merely a possibility of the four-cylinder engine and perfectly feasible within the limits of the capacity of the cylinders to retain their compression. This method is probably too well known to call for any extended description; it consists simply in shutting off the spark, but not the fuel, a few moments before stopping the engine. There will thus be a compressed charge of mixture in one of the cylinders, regardless of the point on which the engine stops. By providing a means of advancing or retarding the spark sufficiently to cause it to occur within any point of the stroke at which the piston may stop, this may be exploded by simply switching on the current, and the impulse is usually sufficient to cause the engine to take up its usual cycle of operations.

Compressed air and springs, also a means of sending the current of an accumulator through its generator and causing the latter to act temporarily as a motor to produce the initial compression in the cylinders, are other means, all of them dependent upon the engine itself to store the energy in the first instance. All have been tried at one time or another by various makers, but none seemingly have come in for any great amount of serious attention.

"Le Cinogene" is the title of a somewhat novel device the details and method of operation of which may be seen at a glance in the accompanying illustrations. It differs from any of those previously mentioned in being provided with an independent external source of energy in the shape of a cylinder of carbonic acid gas at a high pressure—in other words, nothing more or less than a soda fountain reservoir. A lever placed within convenient reaching distance of the chauffeur's hand communicates with the latter and allows the gas to escape into a cylinder, the piston of which carries a long rack engaging a pinion, which in turn revolves the engine shaft. By opening the valve suddenly, the rack is shot out with considerable force, and is said to have sufficient power to give the engine shaft six or more complete turns—more than enough to cause the motor to start, barring derangement. The piston acts against the pressure of a heavy spiral spring, which serves to return the former to the other end of the cylinder after the completion of its stroke, means being provided for the escape of the used gas and for releasing this starting train of gearing from the engine shaft when the latter is running under its own power.



"LE CINOGENE" SELF-STARTER. IN DETAIL AND AS APPLIED TO THE CAR.

To quote from a French contemporary from which the above description is taken, this device "at first sight seems to provide a happy solution of the problem." No data concerning the capacity of the cylinder of gas, its pressure or the number of impulses it is capable of without recharging are given.

Thought the Motor was Junk.

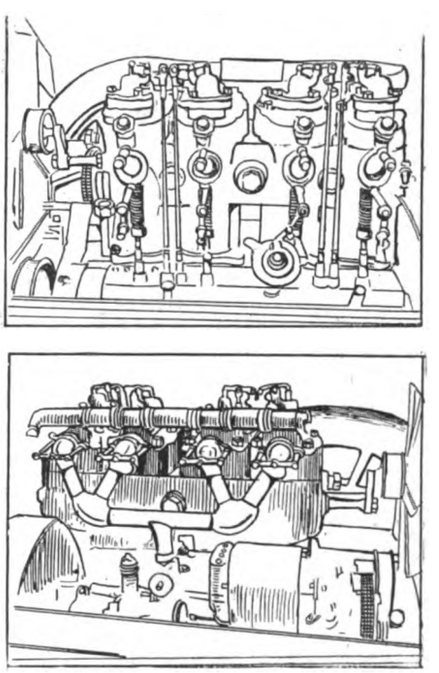
Because they thought an electric motor was only old junk, two Buffalo (N. Y.) boys are in jail on a charge of grand larceny. Fred Penn, twenty years old, and Martin Brennan, nineteen years old, took the motor from a shed belonging to Alfred Miller and tried to sell it in a second hand store, when the police nabbed them.

ONE-PIECE ENGINE CASTING

How the Experiment has been Cleverly Worked Out— Many Changes Made Necessary.

Whether the idea of casting the four cylinders in one piece integral with the water jacket is to prove a success or not is yet to be determined by actual usage. Evidently the task of proving its superiority is to be left, for the present season at least, in the hands of the single maker advocating this radical departure—the builders of the Ariel cars, in England.

The accompanying sketches showing the engine as installed on the latest model of the car in question serve to indicate the general outline of the casting, but unfortunately is otherwise obscured by the amount of detail, such as the rods and rockers of the mechanically actuated valves. However, in the view from this side of the engine it will be noticed that the water jacket is somewhat in the form of a trunk extending the entire length of the engine, and from which the cylinders protrude in both directions, an independent head being fitted. The rather novel placing of the exhaust and intake valves can also be noted. On the carburetter side shown in the second sketch in the magneto is also shown in the lower right hand corner, the detail of cylinder design is not so easily followed, but it will be noticed in both that despite the fact of one casting being employed, the practice of separating the pairs of cylinders somewhat more than the individual members is adhered to, just as it is where twin cylinder castings are used. Outlets of generous proportions are provided at this point on both sides of the engine to permit of the examination of the jacket and cylinder walls.



ARIEL ONE-PIECE CASTING.

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$1,000 IN PRIZES

TO DESIGNERS AND ARTISTS.

The George N. Pierce Company, of Buffalo, makers of Great Arrow Motor Cars, in order to secure the best designs and color schemes possible for their cars, offer the following prizes:

For Motor Car Open Bodies.

1st Prize, $250; 2nd Prize, $100,

for a body for a side-entrance car, based upon availability, usefulness and beauty. Specifications to be supplied.

For Motor Car Enclosed or Limousine Bodies.

1st Prize, $250; 2nd Prize, $100,

for a design for a body with side entrance, as per specifications to be supplied, to be based upon availability, usefulness and beauty. Competitors must supply scale drawings of side and rear elevation and seating plan.

For Color Scheme for Motor Car Bodies.

1st Prize, $200; 2nd Prize, $100,

for a color scheme of some existing type of our motor car, either open or enclosed. In awarding prizes the reliability of colors chosen and the appropriateness to the service will be considered.

Designers and artists are requested to write at once, to the George N. Pierce Company, Buffalo, N. Y., for full description of the contest and specifications or outlines to work upon. Full information cannot be given here.

The contest closes June 1st, 1905.

All designs not worthy of award will be returned at the company's expense, or will be paid for at a price not to exceed fifty dollars at the company's option.

THE GEORGE N. PIERCE COMPANY, Buffalo, N. Y.

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ABOUT MOTOR WAGONS

Progress of Development Here and Abroad—Wide Divergance of Power Employed.

Development of the heavy motor vehicle means two things, according as the subject is reviewed from the standpoint of the American builder or of his foreign contemporaries in the same field abroad. In England, France and Germany, the first two probably having given the subject a greater amount of consideration within recent years than it has received elsewhere, automobiles for heavy haulage mean steam power almost invariably. Where Germany is concerned, alcohol holds greater promise than any of its competitors, and numerous heavy vehicles employing it as a motive power are in daily use.

In the United States a power that has been ignored on the other side almost entirely has here come in for the maximum of attention. That is electricity, and results attained with its use in heavy haulage on city streets, employing units of 2 to 5 tons capacity, has proved it to be equally economical and better adapted to the purpose. For lighter loads, ranging up to but not exceeding two tons, the electric delivery wagon pre-empted the field here, but is now beginning to feel the competition of the gasolene wagon; in France the latter has always had first call after steam, even for passenger service.

A consideration of the advantages and drawbacks of the three powers, steam, electricity and gasolene, based upon experience with all three under conditions sufficiently alike to render the results comparable will be of interest.

Ease of operation and elasticity of control are elements of advantage in favor of steam which, however, are more than offset by the tremendous proportion of dead weight involved in any system of automobile propulsion employing it. Though faster than the heavy draught horse at the outset—the latter's speed in such work seldom attaining to three miles an hour—still, the rate of the pioneer heavy steam vehicles was not satisfactory, but attempts to increase it have only been effected by a decrease in the load efficiency, as shown by the results given in one instance in the "heavyweight" competition held by the Automobile Club of France. The total weight of the vehicle entered the first year was 9.9 tons, with a carrying capacity or useful load of 4 tons, which gave a load efficiency of 44 per cent. Decreasing the former in the second year's vehicle to 8.8 tons resulted in a like diminution of the useful load to 3.3 tons, and the load efficiency to 31 per cent. A further decrease in the total weight to 7.67 tons and the capacity to 2.4 tons raised the efficiency to 39 per cent.

As already mentioned, numbers of heavy steam trucks are in use in England and France, some with a carrying capacity of 10 tons, though this has been found to be excessive, as well as ruinous to the road. The mechanical features of both the English and French vehicles are along practically the same lines. A continuous feed, water tube boiler of small proportions, two-cylinder compound engines placed forward under the chassis for tractors and toward the centre for trucks, transmission being effected by gearing direct to the rear axle or chains to each wheel. The majority are designed to bear a load of 2 to 5 tons, and even with the widest tires have been found to greatly increase the cost of maintenance of the roads. Steam wagons have been adopted for military purposes in England, but the tests referred to have shown the operating cost of the steam vehicle to be very high. Steam wagons were given a trial in New York City by one of the large express companies, two of them, vehicles of five tons capacity each, were in service for several months, but the same company now employs hundreds of light electric delivery wagons and is experimenting with gasolene for heavy loads. The great amount of dead weight involved is evidently an insurmountable objection to the use of steam, which militates against it to an extent that, even if it possessed the feature of greater economy which is lacking, it could not compete in the same class with gasolene and electricity. And this, aside from its disadvantage of requiring a greater amount of skilled supervision. England took up steam for the heavy motor truck as the result of conservatism, and having adopted it to the extent she has, it is not to be expected that it will soon be cast aside—the same spirit will cause its retention, even though apparent that it proves at best but poor economy.

Where the electric vehicle is concerned, extended use in all kinds of service, ranging from the lightest description of delivery wagon up to the five-ton truck with an independent drive on each wheel and power steering, have demonstrated only too well its superior economy and advantages, and the former is bound to increase proportionately as charges for power go down. Where the latter is to be had from the lighting plant of the establishment itself, as in the case of the department stores, many of which have adopted such service on an extensive scale, or where, in the case of the private individual, a gasolene or gas engine is utilized for generating the current, economy has long since been brought to a point where superiority over horse haulage in this respect is no longer in question. When public lighting company's rates reach a more equitable basis, charges to the man who cannot afford to own a private plant will bring the operating cost to about the same level.

Gasolene, as already stated, had first choice in France, and the results attained through its use leave no room for doubt that, with added reliability of the motor and its accessories, this type of vehicle has reached a plane already in advance of the steamer. In Germany similar results have been attained with alcohol, but slight changes in the engine being necessary to adapt it to this fuel, which is there on a par with gasolene, so far as cost and economy in operation is concerned. In this country gasolene has not come in for the attention it deserves for heavy haulage, but is in a fair way of obtaining it.

Here's the "Pedestrian Catcher."

"Pedestrian catcher" is the high sounding title applied by the cousins across the water to what here goes by the everyday name of fender.

Some interesting trials were made recently in the Bois de Vincennes, Paris, with a Serpollet steam car fitted with one of these, differing from the usual Brooklyn trolley car equipment only in the manner of its application. Its dimensions are 3 feet 6 inches by 2 feet, the long side being held upright and tilted at an angle about 18 inches from the road. The body is formed of heavy netting, while the frame is of tubing, the whole apparatus being supported on unsightly pipe brackets.

The trials were made with a dummy weighing 154 pounds, which was successfully picked off the road and deposited in the cradle with the car travelling at speeds of twelve, eighteen and twenty-two miles an hour. The inventor—a French colonial engineer—next trusted himself to the tender mercies of the driver of the car. The latter was, however, only driven slowly—about six miles an hour—but M. David was safely landed in the cradle. It is suggested that not only would the arrangement be found useful in dealing with lackadaisical pedestrians, but also in picking up refractory dogs!

To Put Mufflers to the Test.

That "silence is golden" seems to apply to the working of the automobile motor with no less force than to the subject which originally called it forth. Though somewhat later in the day, where American cars are concerned, as few manufacturers here have not come to realize the value of seeing and not hearing a motor "mote," the Automobile Club of France will hold a muffler, or "silencer," competition on April 1.

In the rules just issued it is stated that each system should be represented by two sizes of silencer—one for a single cylinder motor and the other for a four cylinder engine. The engines on which the trials will be carried out have the following dimensions: Single cylinder engine, bore 140 mm.; stroke, 160 mm.; speed, 800 revolutions per minute; 8-9 horsepower. Four cylinder engine, bore, 105 mm.; stroke, 105 mm.; speed, 1,400 revolutions per minute; 18-24 horsepower.

All devices entered must be accompanied by sectional line drawings showing the interior construction. The judges, when making their awards, will take into consideration the silencing effect, back pressure induced, size, weight and simplicity of the apparatus.

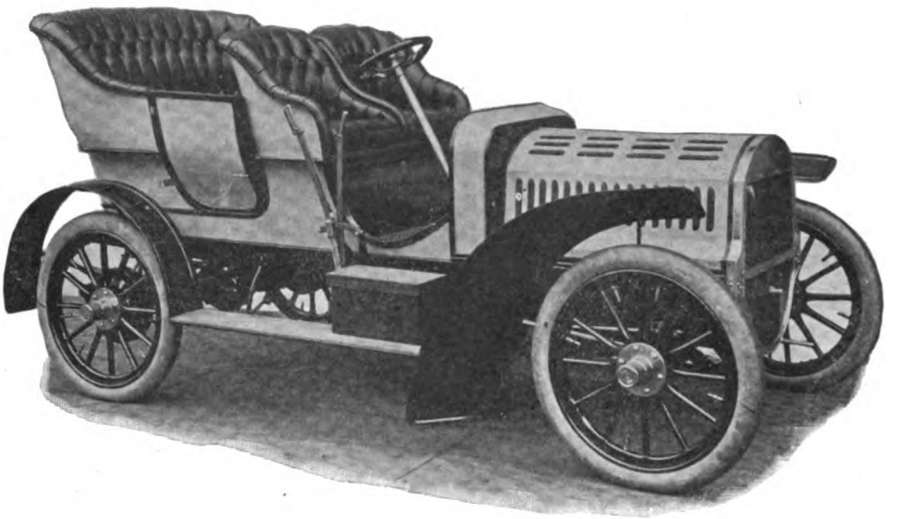
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1650 POUNDS OF JOY

IS A NOT INAPT DESCRIPTION OF THE

Frayer-Miller Air-Cooled Car.

In other cars you may get greater bulk and more weight of metal for your money, but not more power or more pleasure.



Cooled by **controlled** air.

NO WATER TANKS
RADIATORS
PUMPS

LESS WEIGHT

per horsepower than any other car in the world.

Studded with exclusive features.

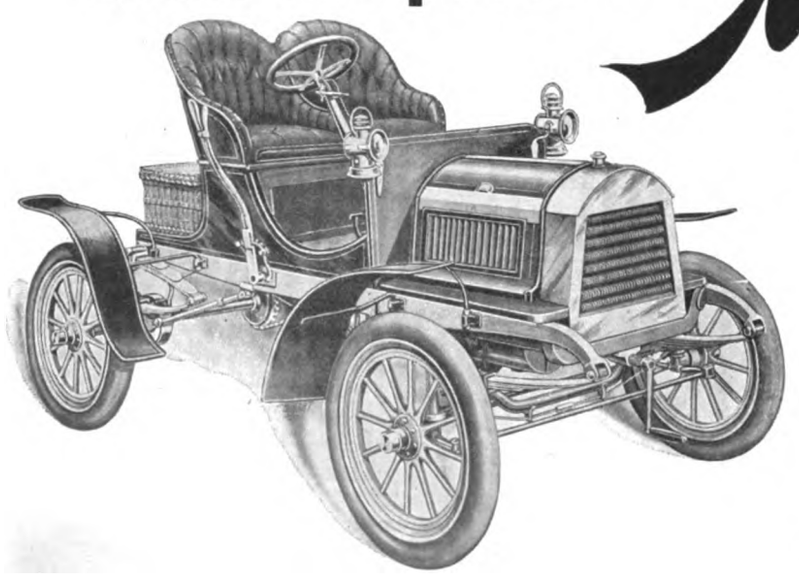
Study them before you make a choice.

24 H. P. 1650 LBS.

OSCAR LEAR AUTOMOBILE CO., - Columbus, Ohio.

NEW ENGLAND AGENTS: D. P. NICHOLS & CO., 116-122 W. Brookline St., BOSTON, MASS.

You may pay more than the price of the *Mitchell*



but it will not assure you a car that will do more or do it more satisfactorily,

You cannot pay less and get anything like what we offer in our car.

It's a bold statement, we know, but if you want evidence in support of it, drop us a line.

MITCHELL MOTOR CAR COMPANY, - Racine, Wis.

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The Week's Patents.

783,112. Lubricator. Giovanni Enrico, Turin, Italy, assignor to Societa Fabbrica Italiana Automobili di Torino. Filed April 6, 1904. Serial No. 201,919.

Claim.—1. In a lubricating apparatus, a chamber for containing oil, a feeding device acting to elevate oil from said chamber and deliver it out of the apparatus, and means for maintaining a substantially constant level of oil in said chamber, said means acting to supply fresh oil to said chamber to take the place of that delivered.

783,121. Speed Regulator for Explosion Engines. Emile Martignoni, Paris, France, assignor to Société Anonyme des Moteurs et Automobiles Hérald, Paris, France. Filed September 26, 1903. Serial No. 174,836.

Claim.—1. In an explosion-motor, in combination, a cylinder, a carburetter, a chamber 20 communicating with said cylinder and having a cylindrical portion with ports at opposite ends communicating with said carburetter and the atmosphere, respectively, a hollow piston 16 in said cylindrical portion, a piston-rod 15, a link 14 connected thereto, a transverse shaft 11 having near one end an arm 13 connected to said link, a governor, a fork 10 upon said shaft engaging the sliding member of the governor whereby the piston obstructs more or less the passage of the combustible mixture according to the velocity of the motor, and interrupts the supply of the mixture completely and admits only pure air when the velocity reaches a predetermined limit in order to cool and cleanse the cylinders, a speed regulator 29, including a spring 32, and arranged at the opposite side of the motor from the link 14, said regulator and link being extended parallel with the length of the motor, and an arm 31 on the end of said shaft 11 opposite the arm 13 and connected to said regulator 29, whereby said regulator determines the resistance of the spring to the action of the governor, according to the speed at which the motor is to run.

783,138. Pump for Inflating Pneumatic Tires. Decimus Rowe, Wanganui, New Zealand, assignor of one-half to John Stobert, Wanganui, New Zealand. Filed June 15, 1904. Serial No. 212,743.

Claim.—In means for inflating pneumatic tires, a semicircular casing provided at one end with means whereby it may be pivoted to a fixed point, a longitudinal slot in the top of the casing, a sliding bolt fitting in such slot and adapted to be secured at any point therein, and a pump, the plunger rod of which is pivoted to the sliding block and the free end of which is provided with means whereby it may be pivoted to a fixed point, substantially as specified.

783,158. Sparking Igniter for Explosive Engines. Arthur E. Taylor, Elyria, Ohio, assignor to The Elyria Gas Engine Company, Elyria, Ohio, a corporation of Ohio. Filed July 9, 1903. Serial No. 164,788.

Claim.—1. In an explosive engine igniter, in combination, a pair of electrodes, one of them being mounted on a movable shaft, a block in which said shaft is journaled, an arm rigidly secured to said shaft, a hammer plate loosely surrounding the shaft and held in place by said arm against the face of said block, a pair of wings both on the same side of said hammer plate, said arm being adapted to engage one of said wings, a spring compressed between the arm and the other wing, and means for moving said plate to cause the electrodes to contact and thereafter suddenly release them, substantially as described.

783,159. Lubricator. James Trotter, Sycamore, Ill. Filed May 9, 1902. Serial No. 106,559.

Claim.—1. In a device for the purpose described, the combination of means for forcing a supply of lubricant, a lubricant passage communicating therewith and connected with the part to be lubricated, an oil relief in said passage between the supply and the part to be lubricated, a pressure regulator actuated by the pressure in said passage for opening said relief, and a direct connection between a source of fluid pressure and said pressure regulator for closing said relief, substantially as set forth.

783,168. Power Transmission Mechanism for Automobiles. Walter C. Baker, Cleveland, Ohio. Filed May 29, 1903. Serial No. 159,266.

Claim.—1. A casing for the power transmitting mechanism of an automobile, consisting of a casing body, a cap which is separable from the body in a diametrical plane, means for fastening said body and cap together, and two aligned tubes clamped between said body and cap extending laterally in opposite directions therefrom, substantially as specified.

783,194. Two-Cycle Internal Combustion Engine. Arthur Hardt, Cologne, Germany. Filed September 2, 1903. Serial No. 171,579.

Claim.—1. In an internal-combustion engine comprising the working cylinder, pump for forcing explosive mixture into the working cylinder, ports in the cylinder wall controlled by the piston for the escape of the spent gases, and for admission to the working cylinder of air and explosive mixture, the combination with the working cylinder and the pumping cylinder, of a channel connecting the said cylinders, port for admitting air into said channel and means for opening the said admission port at the end of the return stroke of the piston, substantially as and for the purpose described.

783,207. Vibrator for Induction or Spark Coils. Arthur A. Kent, Philadelphia, Pa. Filed November 8, 1904. Serial No. 231,862.

Claim.—1. In a vibrator, an armature, a plate, to which said armature is attached so as to vibrate therewith, a fulcrum intermediate the ends of said plate and projections adjacent each end of said plate to produce a flection thereof and to hold the same upon said fulcrum.

783,219. Pneumatic Tire. Harry A. Palmer, Erie, Pa. Filed October 12, 1904. Serial No. 228,174.

Claim.—1. The combination of a pneumatic tire sheath having an annular opening in its inner face, with inwardly extending clips secured to the sides of said sheath and adapted to be clamped between the sides of a vehicle wheel rim and the channel flanges secured thereto, substantially as set forth.

783,289. Protector for Pneumatic Tires. Emile Lapisse, Elbeuf, France. Filed November, 1904. Serial No. 232,092.

Claim.—1. A protector for pneumatic tires

FOR SALE.

1 1904 Knox Touring Car, canopy top and extras, - - - - $1150.00
1 1904 Autocar, top baskets and lights, 1100.00
1 1903 Winton, with extras, - - 850.00
1 1903 Model "C" Knox, top and extra shoe, - - - - 550.00
1 1903 Cadillac, auxiliary springs and extras, - - - - 400,00

Will guarantee above cars to be in perfect condition. HARRINGTON'S AUTO STA. No. 1, 31 Central St., Worcester, Mass.

WANTS AND FOR SALE.

15 cents per line of seven words, cash with order.

In capitals, 25 cents per line.

FOR SALE—4 passenger side-entrance car bodies, in good condition at considerably reduced price. DETROIT CARRIAGE CO., Detroit, Mich.

FOR SALE—Bargain, Running Gear and Body, with or without Tires, suitable for 10 to 16 H. P. engine. Address, Box 347, Erie, Pa.

FANNING Electric Runabout. New and complete, less batteries. Best offer takes it. List price, complete, $750. Address Drawer D, Albany, N. Y.

CLEMENT-BAYARD 15 H. P. Autocars; 12 H. P. Cadillacs A and B models and Oldsmobiles; all in excellent condition and perfect running order at exceptionally low prices, to make room for the new stock. MOTOR CAR CO. OF NEW JERSEY, 291 Halsey St., Newark, N. J.

STEVENS-DURYEA, with top, used one season, $725; 1903 Olds, $300; 1904 Cadillacs, $490 up; Renault Touring Car, excellent condition; $750; XLIII Columbia, used 400 miles, $1250. best bargains in West. Write MORIARTY CO., Kansas City, Mo.

TO PACKARD BUYERS—We have one second hand 22 H. P. Packard, refinished throughout with headlight, side hampers, canopy top, complete, $2850; also one Model "A" Franklin, with rear deck hamper, mahogany canopy, headlights, etc., $1200; one Cadillac Model "B" complete, at $650. CENTAUR MOTOR COMPANY, Buffalo, N. Y.

TO PACKARD DEALERS—We will refund your deposit and pay you premium of $350 each on any 28 H. P. Model "N" Packard that you have contracted for and will release to us. CENTAUR MOTOR COMPANY, Buffalo, N. Y.

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NIAGARA light touring car, 3 x 30 tires. In fine condition; guaranteed. Photos and description on application. Price $450. WILSON AUTO MFG. CO., Wilson, N. Y.

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Oldsmobile, - - - - - 250.00
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CRESCENT AUTOMOBILE CO., 2565 Boulevard, Jersey City. Reference, First National Bank, Jersey City.

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comprising a strip of soft and elastic material, strips of heat-insulating material incorporated in the said strip, and a strip composed of metal rings linked together like a coat of mail, and a layer of elastic material covering the said rings and filling the interstices of the same, the said composite strip being located between the insulating strips.

783,308. Vehicle Wheel. William S. Plummer, St. Louis, Mo. Filed August 22, 1904. Serial No. 221,659.

Claim.—1. In a vehicle wheel, a hub; spokes extending outwardly from the hub; sockets slidingly mounted upon the outer ends of the spokes; flanges extending from the sockets; a rim encircling the flanges; rivets inserted through the rim and through the flanges; bearing plates against the outer ends of the spokes inside of the rim, and set screws screw-seated in the rim and engaging the bearing plates to tighten the rim upon the spokes; substantially as specified.

783,336. Rotary Explosive Engine. Charles R. Twitchell, Dayton Heights, Cal., assignor to Brown-Winstanley Manufacturing Company, Los Angeles, Cal., a Corporation of California. Filed July 31, 1903. Serial No. 167,748.

Claim.—1. In a rotary explosive engine, in combination, a series of cylinders having exhaust controlling valves, means for operating the valves, means independent of the valve-operating means for periodically actuating such means during the revolutions of the cylinders, and means for regulating or adjusting, while the engine is in operation, the time of actuation of such periodically actuating means to control the speed of the engine.

782.244. Governor for Explosion Engines. Bennie W. Haydon, Waco, Tex. Filed February 29, 1904. Serial No. 195,922.

Claim.—In a governing device for explosion engines, a casing connected to the inlet port of the engine, a cylinder forming a part of the casing, said cylinder being open at one end to the atmosphere, a ported tube extending within the casing and serving to admit an explosive compound thereto, the inner end of said tube being open, said tube being of less diameter than the casing to permit the free passage of the explosive mixture, a piston valve arranged within the tube to control the effective area of the port of the latter, a piston in said cylinder, said piston being of greater area than the valve, a stem connecting the valve and piston and extending through the end of the casing, a spring encircling said stem, and means for adjusting the stress of the spring.

782,262. Cone Sprocket Wheel. Frank L. Morse, Trumansburg, N. Y. Filed June 12, 1903. Serial No. 161,231.

Claim.—1. A cone sprocket wheel comprising a plurality of steps or rings of sprocket teeth and intermediate frusto-conical surfaces joining said steps.

782,276. Oiling Device for Chain Wheels. Karl G. Roebling, Trenton, N. J. Filed October 14, 1904. Serial No. 228,390.

Claim.—1. The combination with a wheel, of an oiling device consisting of an annular plate secured on the side of the wheel, a second annular plate secured to the first-mentioned plate with a space between the plates forming an oil-chamber, there being small oil passages between the edges of the plates for the passage of oil from the chamber to the wheel.

782,318. Vehicle Tire. Samuel G. Board, Manchester, England. Filed March 14, 1904. Serial No. 198,141.

Claim.—1. Wheel tires for motor cars and other vehicles constructed of a metal hoop of any desired cross section provided with perforations in combination with a plastic material of saw dust, magnesium oxid, and a binding material compressed therein until solidified substantially as described.

782,336. Wheel. Peter F. Hein, Crownpoint, Ind., assignor of one-half to Walter L. Dodd, Westville, Ind. Filed October 31, 1904. Serial No. 230,797.

Claim.—1. The combination of a shoulder axle, an axle skein thereon bearing at its inner end against said shoulder, a laterally projecting flange (b) at the inner end of the axle-skein, a disk (g) mounted on the axle and bearing against the outer end of the axle-skein, a nut on the axle for holding the disk against the axle-skein, a sleeve surrounding the axle, and held in position between the disks b and g, springs interposed between the sleeve and the axle-skein, a tire supporting ring, fitted between the disks b and g and adapted to move transversely of the axle between said disks and a bolt secured to the tire supporting ring and extending through radial slots in the disks whereby the tire supporting ring is made to revolve with the axle-skein, but is free to move radially relatively thereto.

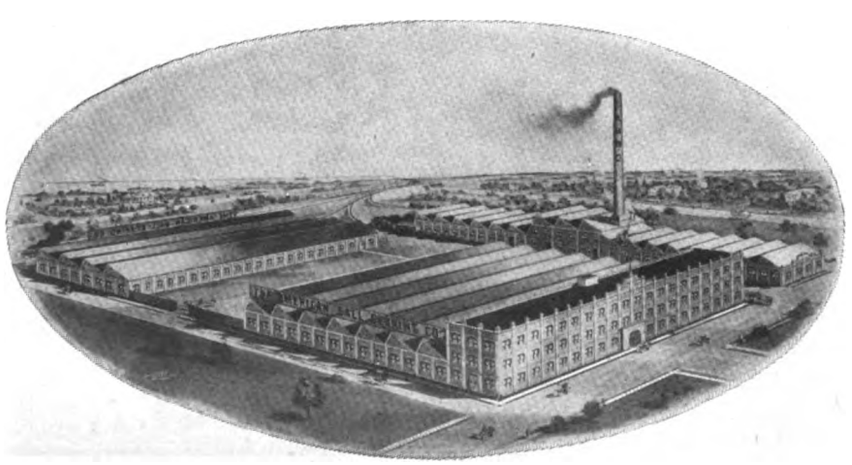
182,343. Centrifugal Pump. James M. King, Rochester, Minn. Filed August 8, 1903. Serial No. 168,818.

Claim.—1. A wheel comprising a series of chutes of like formation curved outwardly and rearwardly and having their delivery ends arranged wholly within and approximately at a tangent to the circumference of the wheel to discharge parallel with its circular path, substantially as set forth.

It Never Short Circuits.
THE
Shoot Proof
Spark Plug.
The insulation is complete. The joints are gas-proof. The plug is large, strong, heat-proof, and practically wear-proof. Guaranteed for six months.
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Replaceable parts, all sizes, by mail or dealers, $2. Send for booklet.
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A 40-45 H.P. five passenger, side entrance, gasolene touring car of the highest grade

Without a starting crank.
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Not an experiment, but a success.

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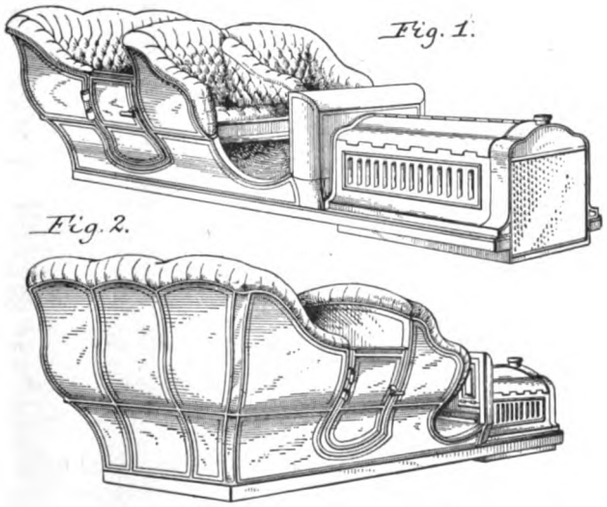
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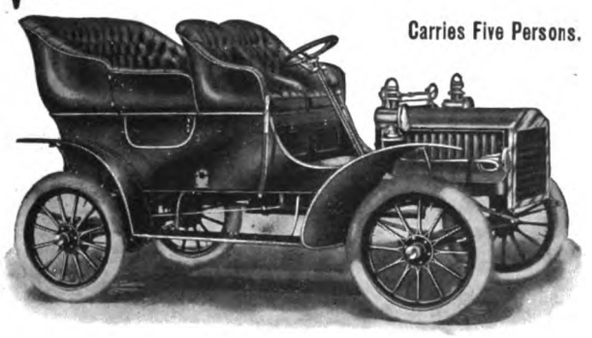
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MODEL E. $1250.

Carries Five Persons.



If you are a prospective buyer of an automobile, you have two important things to consider—FIRST COST and AFTER COST. If either is excessive, you are the loser. The first cost is a known fact, and you can deal with it quickly and intelligently. The after cost, however, is different. It is a problem the solution of which is difficult to even the most experienced automobilist. You can depend upon one thing to guide you safely; that is, the type of car to buy. A clean-cut, light, compact car, with two-cylinder opposed engine suspended near the centre of the running gear, is the style of automobile which will give you the maximum amount of service at the minimum cost. THE MICHIGAN IS THAT CAR.

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It travels at a good rate of speed without any uncomfortable jarring or jolting, as well as running almost in silence.

Isn't this the car you need? Let's hear from you and we'll endeavor to arrange a demonstration. Make us prove our claim.

Factory inspection aids in buying—we want you to come.

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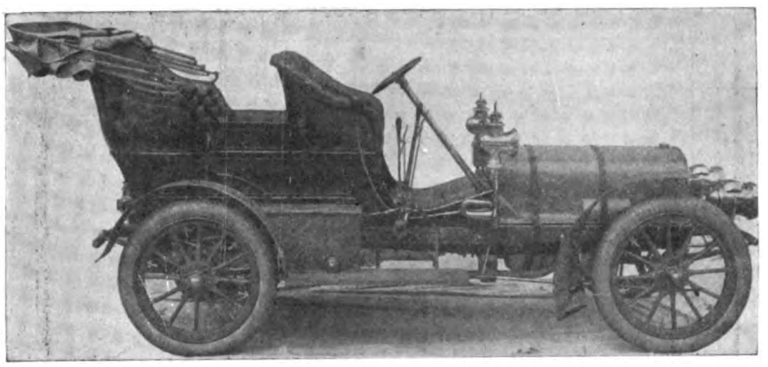
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4-Cylinder Vertical, 30 H. P.
THE FASTEST TOURING CAR IN THE WORLD AT THE PRICE.

It was perfection of detail and careful workmanship which made French automobiles famous the world over. History repeats itself, and the same fame for the same reason applies to the 1905

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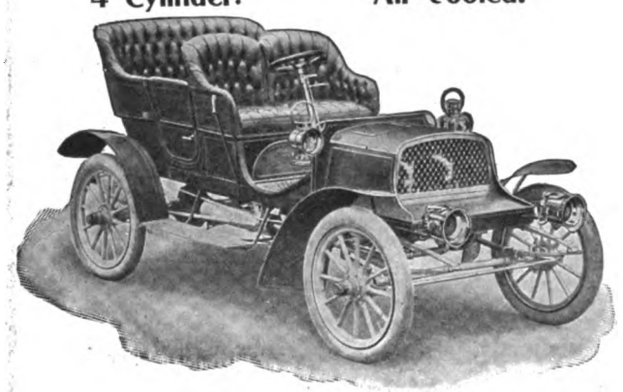
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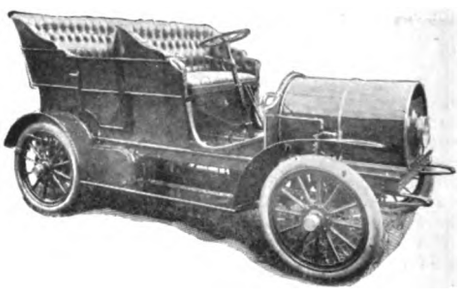
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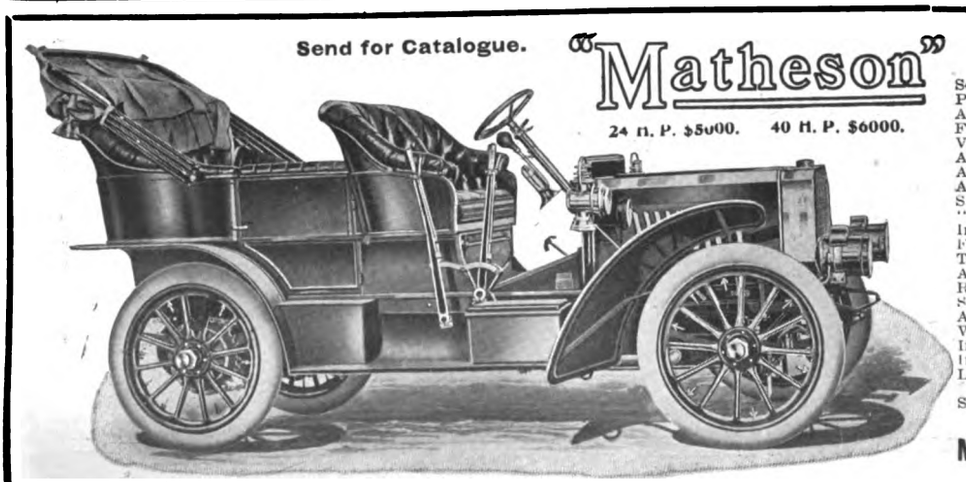
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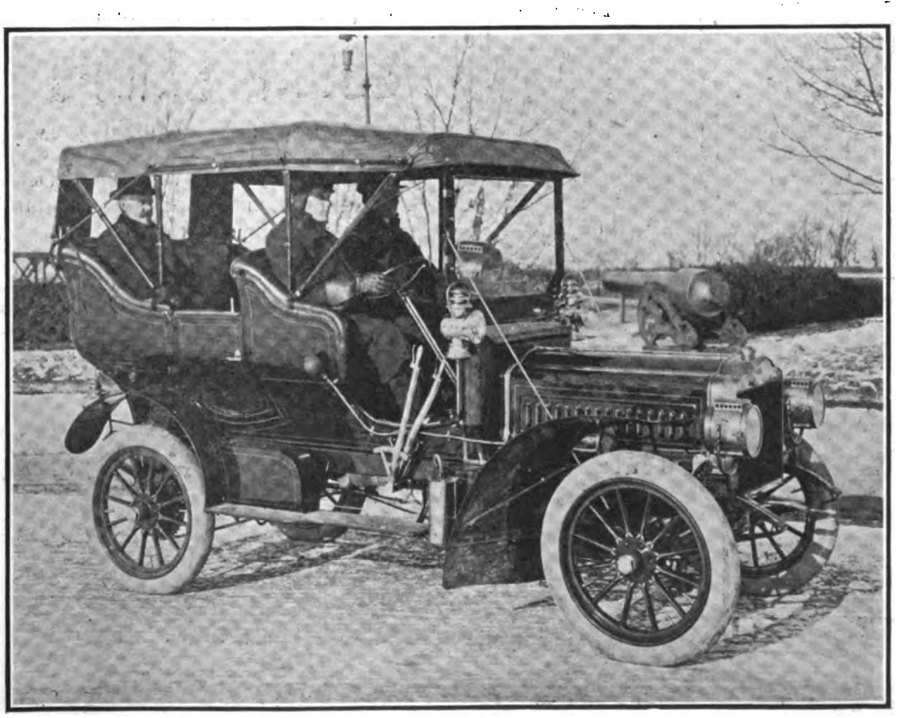
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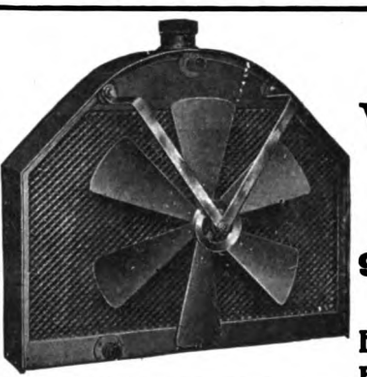
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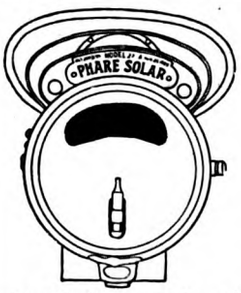


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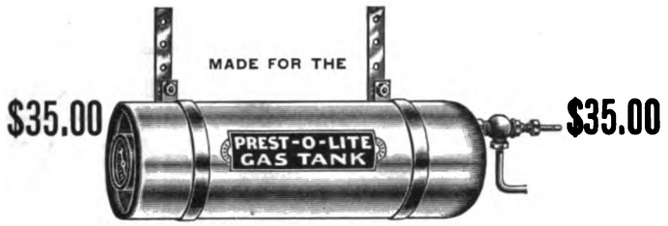
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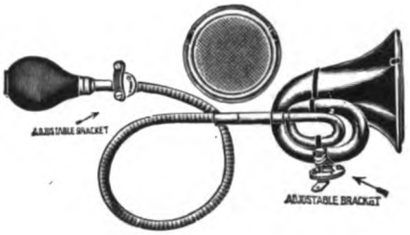
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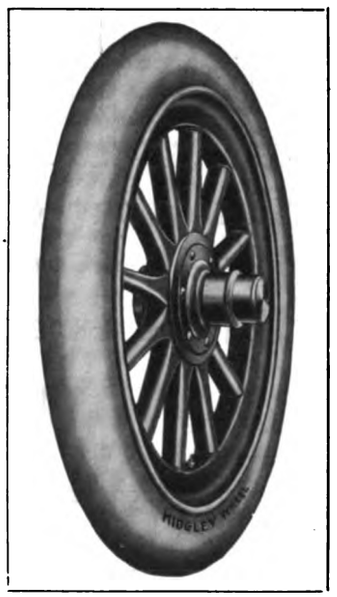


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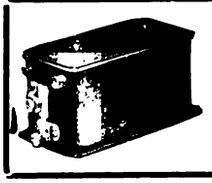
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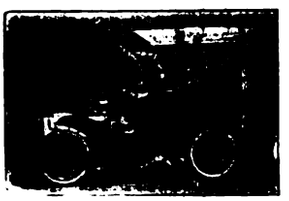
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Automobile Chains, Sprockets, Spur and Bevo Gears.

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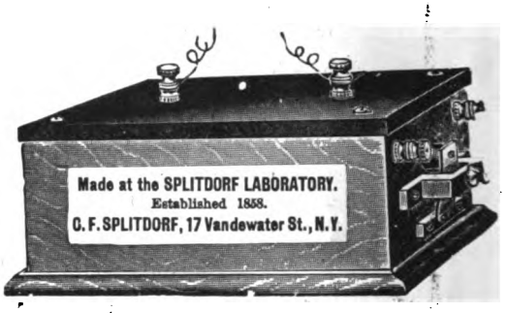
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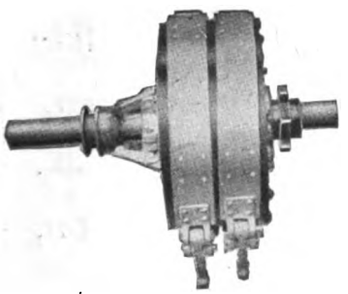
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Two Speeds and Reverse.

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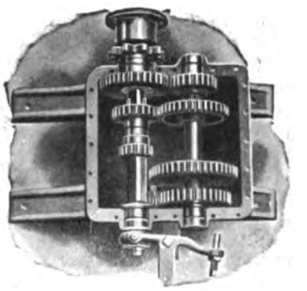
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Transmission Gears

We have been manufacturing these gears for the large trade for three years, consequently in buying them you buy no experiments. Our prices are interesting. Write us.

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An instrument that will enable you to determine the grade per cent. you are ascending or descending.

Sent postpaid on receipt of price, $1.50.

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DESCRIPTION OF NEW TRAINS

"Between Cincinnati and Detroit" on the C. H. & D.—Pere Marquette Line.

The train consists of a combination baggage car and smoker, a ladies' coach, combination coach and dining car, and a perfect dream of a parlor car, which, when lighted with a myriad of electric bulbs, was resplendent and fascinating in the highest degree. Every one of the cars except the baggage and the smoker, which is of Flemish oak with rattan high back seats, is finished in mahogany. Even the combination car at the head of the train is provided with a lavatory with nickel-plated washstand. It will seat 44 people. The ladies' coach seats 88 people, and has high-back, rolled-top plush seats. A novelty which excited admiration is the coach and diner in one, there being seats for 50, although a spacious kitchen is locatetd in the centre, with four tables in the rear of the kitchen. But the triumph of modern car building is shown in the parlor car, which is said to be the handsomest ever turned out in the Pullman shops. The mahogany finish is made more effective by the olive green revolving chairs.

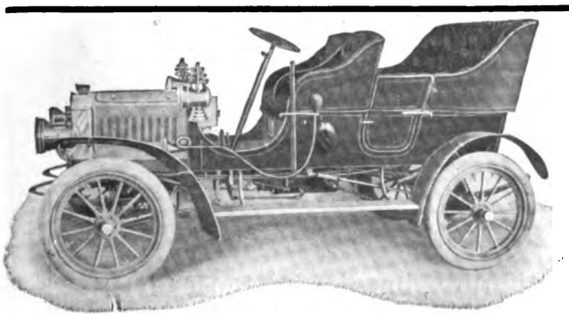
The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

In addition to the regular parlor car porters, etc., there is a neatly uniformed train porter, whose duties are to help ladies and children in and out of the coach part of the train, see that the coach lavatories are kept clean and supplied with fresh towels, and that the forward part of the train is kept up to the standard.

GRAY AND DAVIS

"Makers of Smart Automobile Lamps."

Be Sure YOUR CAR is Equipped With Them. AMESBURY, MASS.



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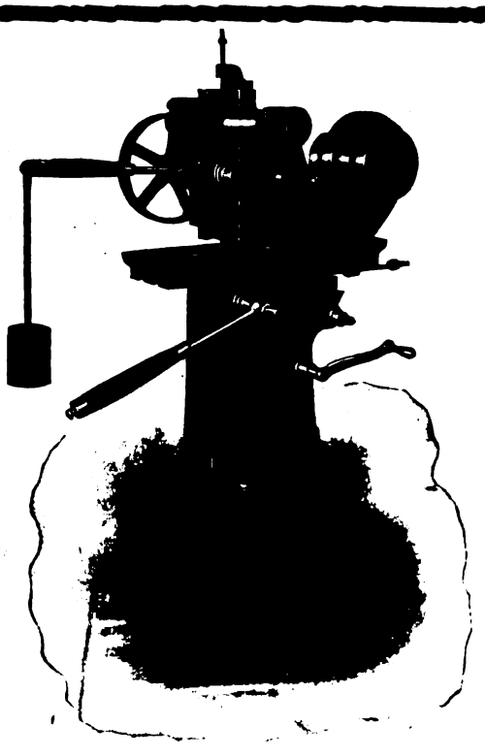
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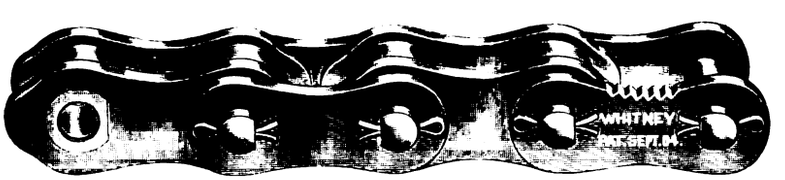
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Why is this **"WHITNEY" HAND (FEED) MILLING MACHINE** used in preference to all others by U. S. Government, Western Electric Co., Underwood Typewriter Co., Smith & Wesson, leading Automobile Manufacturers, etc., etc.? Possibly it is because we make more of a specialty of Hand Millers than any other company in the world, and give our customers greater return for their investment by way of quality, quantity, range and efficiency.

These are "WHITNEY" STANDARDS for Roller Chains.



	Diameter of Roll.
1 in	5/8 in.
1¼ in.	¾ in.
1½ in.	⅞ in.
1¾ in.	1 in.
2 in.	1⅛ in.

The PITCH SIZES and DIAMETERS advance uniformly in perfect proportion. They have broken all records for efficiency, and have been adopted for most of the leading American Cars, including

"ACME" "AUTO-CAR EQUIPMENT" "BAKER" "BRAMWELL" "CADILLAC" "COLUMBIA" "CORBIN" "CHAMPION" "ELWELL-PARKER" "FORD" "FRANKLIN" "GROUT" "GAETH" "GIBBS" "HARTFORD MOTOR STREET SWEEPER" "KNOX" "LENAWEE" "MITCHELL" "MOLINE" "MATHESON" "MANHATTAN" "OLDS" "POPE-HARTFORD" "PIERCE-RACINE" "PRESCOTT" "QUEEN" "RAMBLER" "STEARNS" "SOMMER" "SNELL" "THOMAS 50 & 60 H. P." "TOURIST" "WAYNE" "WESTERN ELECTRIC"

PITCH.	Diameter of Roll.
1 in.	9-16 in.
1¼ in.	5/8 in.
1½ in.	¾ in.
1¾ in.	1 in.
2 in	1⅛ in.

These are the OLD or COMPETING Standards.

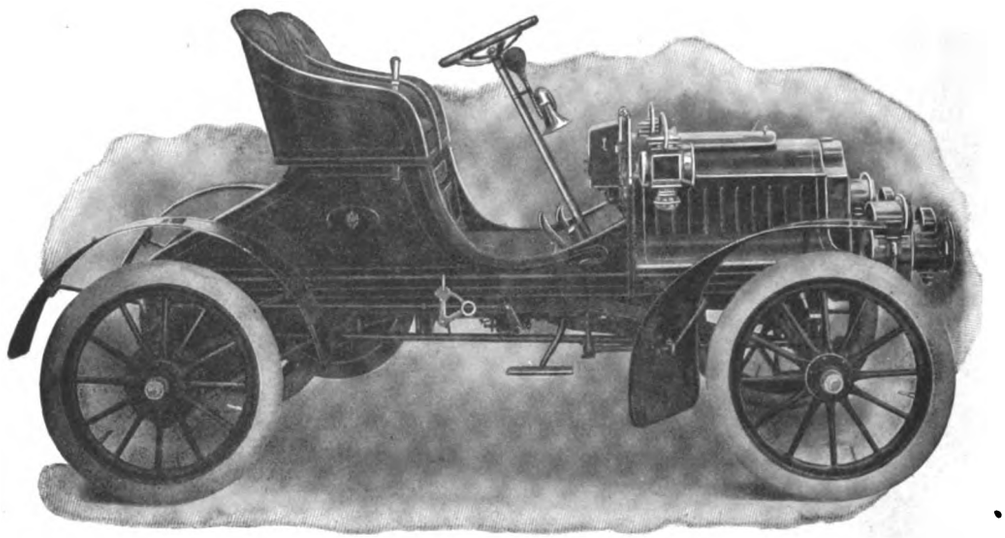
The PITCH SIZES advance uniformly, but the DIAMETERS are irregular and not in perfect proportion.

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THE business or professional man looking for results finds in our Touring Runabout at **$750** an investment which yields immediate returns—satisfying service and actual dollars and cents profit. It's like buying a government bond—as sure as you put a dollar in, you will take the full value of a dollar out.

Every OLDSMOBILE is subjected to thorough and exacting tests before being placed on the market. They are held up to a standard of requirement, both as to quality of material and the perfect working of every part, maintained by no other automobile manufacturer. Proof of this is in the yearly increase in the popularity and consequent sales of our machines.

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We will take pleasure in furnishing you all the evidence, details, specifications, etc., you may require.

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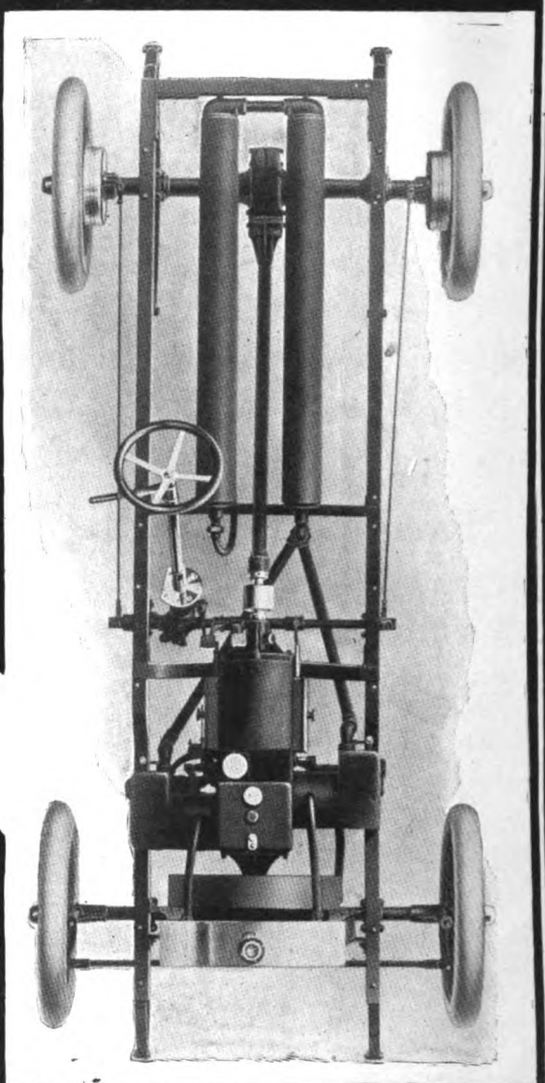
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Note the conspicuous absence of complexity and that "machine-shop appearance" that scares away so many buyers.





THEN LOOK AT THE OTHERS!

You'll probably better understand why the "Silent Northern Touring Car" is the choice of discriminating buyers. Catalogue and book of testimonials for the asking. Better ask now.

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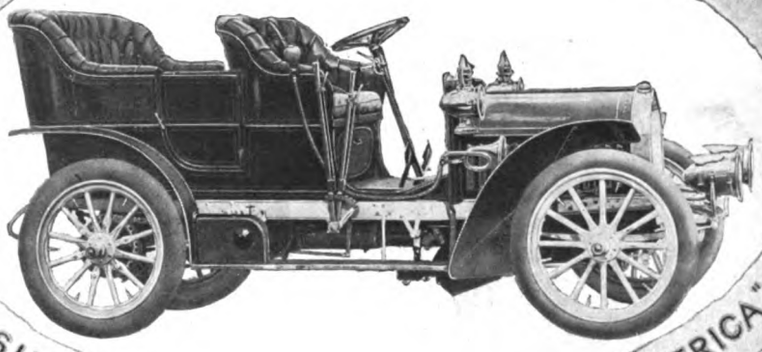
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are not only equal in all respects to the best foreign cars, but are a **great deal better for American roads.** There are many reasons for the superiority of LOCOMOBILE CARS, but little room here to state them. What we want you to do is to send for our catalogue. It is not a rambling mass of generalizations, but a book of facts and figures. Our catalogue tells you **why** the LOCOMOBILE is better than any other car in the world. Mailed free.

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Weight, 1,800 lbs.
Make-and-break ignition. Pressed steel frame.

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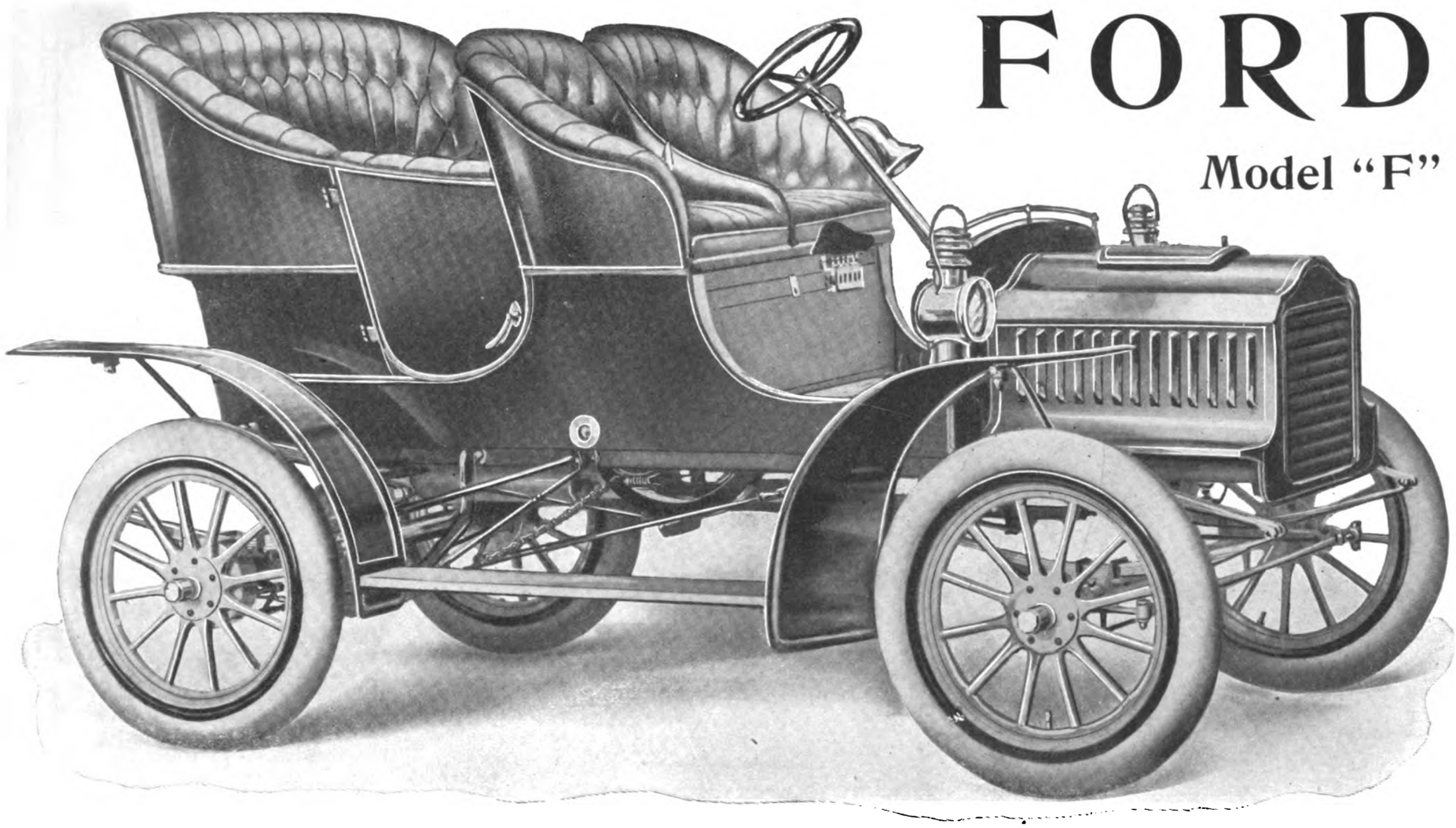
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Model "F"



THE FORD IS FOREMOST among automobiles by reason of the seasoned principles and mature experience which stand behind each car. MODEL F is the most advanced type of automobile construction—a handsome side-entrance car, weight 1400 lbs., with ample power furnished by its matchless 2-cylinder motor.

PRICE, $1200.

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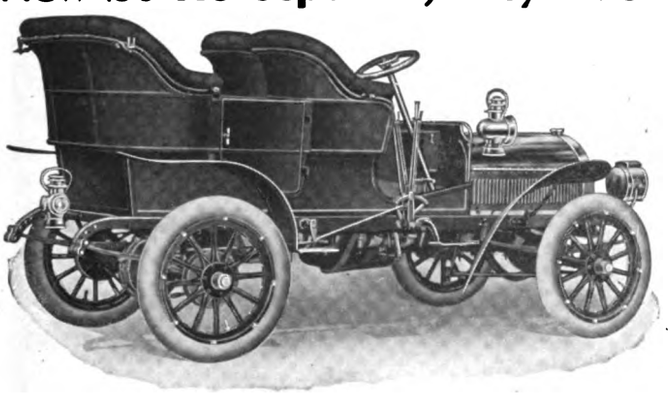
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"STEVENS-DURYEA" TOURING CAR

New 20 Horsepower, 4 Cylinder



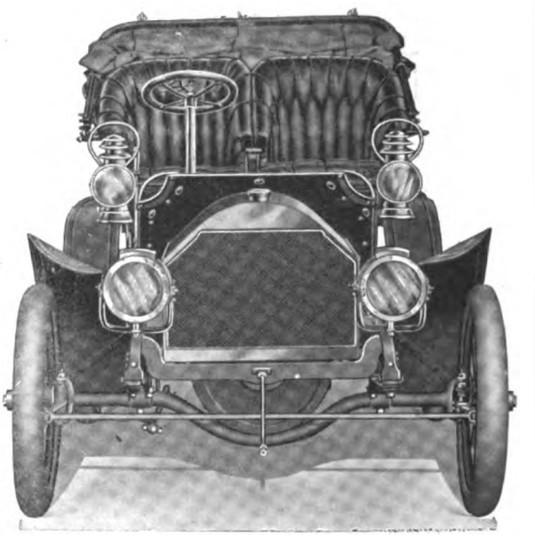
Gentlemen:—I take great pleasure in speaking a good word for the STEVENS-DURYEA. This is the third automobile I have owned, and it beats them all. I am delighted with it. I cannot speak too highly of it. In fact, I would not take three times what I paid for it if I could not get another just like it. It certainly is the smoothest running, easiest riding machine yet produced. There is not a cheap thing in the construction; every part is beautifully made. Such a piece of work is bound to give satisfaction and do good work. I use it every day, and it is always ready for business. When my friends ask me what to buy my answer is, "STEVENS-DURYEA" every time.

Very truly,

(Signed) DR. FRANK W. BRANDOW, Dentist.

Further Comment is Unnecessary.

ASK YOUR AUTO AGENT.



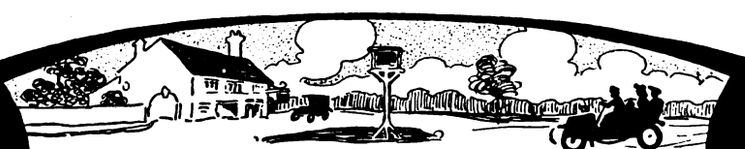
All we wish to emphasize is, **TRY** one of our reliable, efficient and durable carriages, and thus ascertain the secret for the invariable popularity of the **STEVENS-DURYEA.**

Send for beautifully illustrated catalogs, embodying detailed description, and also history and records of our noted "racing spider."

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J. STEVENS ARMS & TOOL CO.,
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POPE AUTOMOBILES



POPE AUTOMOBILES

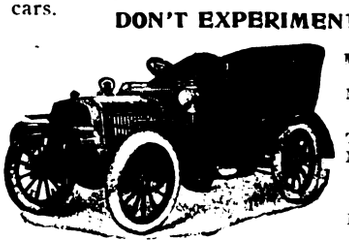
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DON'T EXPERIMENT. BUT GET THE BENEFIT OF OUR LONG EXPERIENCE.



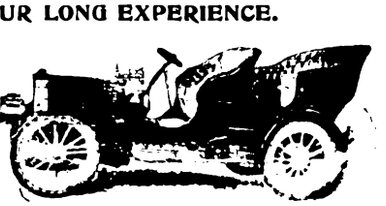
Type VII, $3200

Model VII. New design 30 H. P. front entrance. **Prompt deliveries..$3200**

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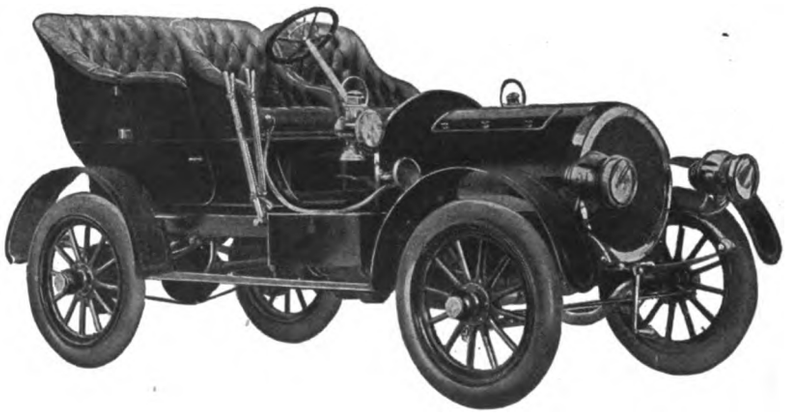


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Pope Motor Car Co., - - Toledo, O.

MEMBERS ASSOCIATION LICENSED AUTOMOBILE MANUFACTURERS.

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NATIONAL, MODEL C, PRICE, $2,500.

NATIONAL

Model "C"

"GOES THE ROUTE."

With NATIONALS You Lead—
Others Follow.

Side entrances to detachable tonneau.
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New round radiator. Oval hood.
Dynamo, Storage Battery and Dry Cells.
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Double ball bearing slide gear transmission—direct on high.
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Internal expanding metal to metal brakes.
Pressed steel frame. Long wheel base. Engine and transmission on sub frame. Double steering connections.

The Best Touring Car Agency in America for 1905.

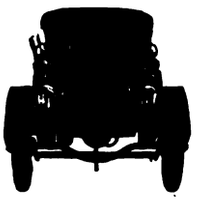
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THE BAKER ELECTRIC

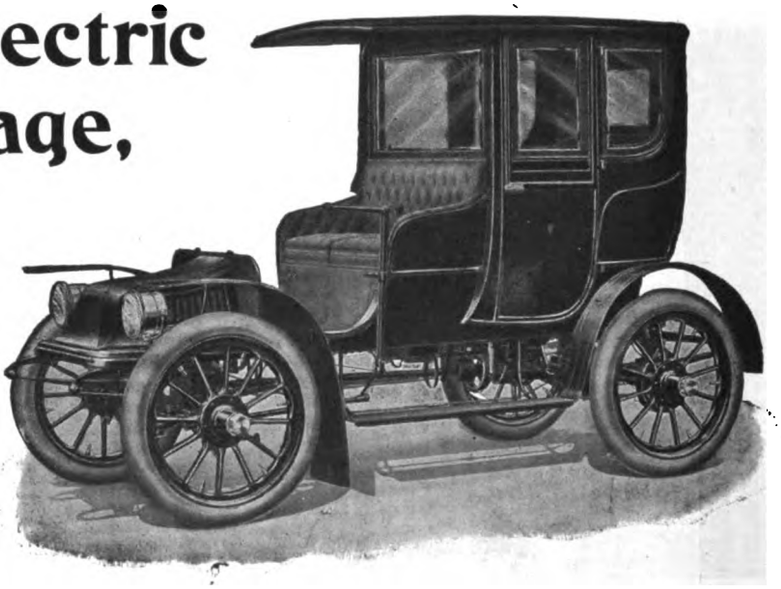
The Baker Electric Depot Carriage,

The Most Elegant of all Electrics.

ALSO,

RUNABOUTS, STANHOPES,
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WE ARE READY TO TALK BUSINESS.



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The Car of Achievement



THE YOUNGEST LICENSED DRIVER IN THE COUNTRY, MASTER E. S. ESTY, AGED 11, OF BROOKLINE, MASS., IN HIS PEERLESS CAR

Peerless Control

The fact that the youngest licensed driver in the United States, a boy of eleven, drives a Peerless Car is certainly proof positive of its ease of control.

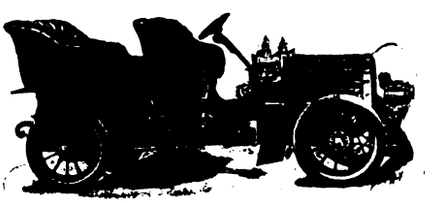
1905 Prices

24 H. P.	35 H. P.
$3,200	$4,000

Send for Catalogue now ready.

Peerless Motor Car Co.
CLEVELAND, OHIO
Member A. L. A. M.

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CORBIN CARS EXCEL

in a motor, four cylinder, vertical under the hood which is absolutely and positively cooled by air by means of the patented Corbin air cooling system.

CORBIN CARS EXCEL

in a combining of the engine crank case and transmission gear case in such manner as to make them practically integral, thereby insuring their accurate alignment.

CORBIN CARS EXCEL

in a steel pan construction extending from the crank case to the front and side frame members, which completely excludes all dust and dirt from the motor mechanism.

CORBIN CARS EXCEL

in a positive acting force feed lubricator which automatically forces oil in regular quantities and with mechanical precision to all motor parts. The oil is fed in exact ratio to the engine speed and visible to the operator.

CORBIN CARS EXCEL

in the best of everything in material, workmanship, finish and equipment.

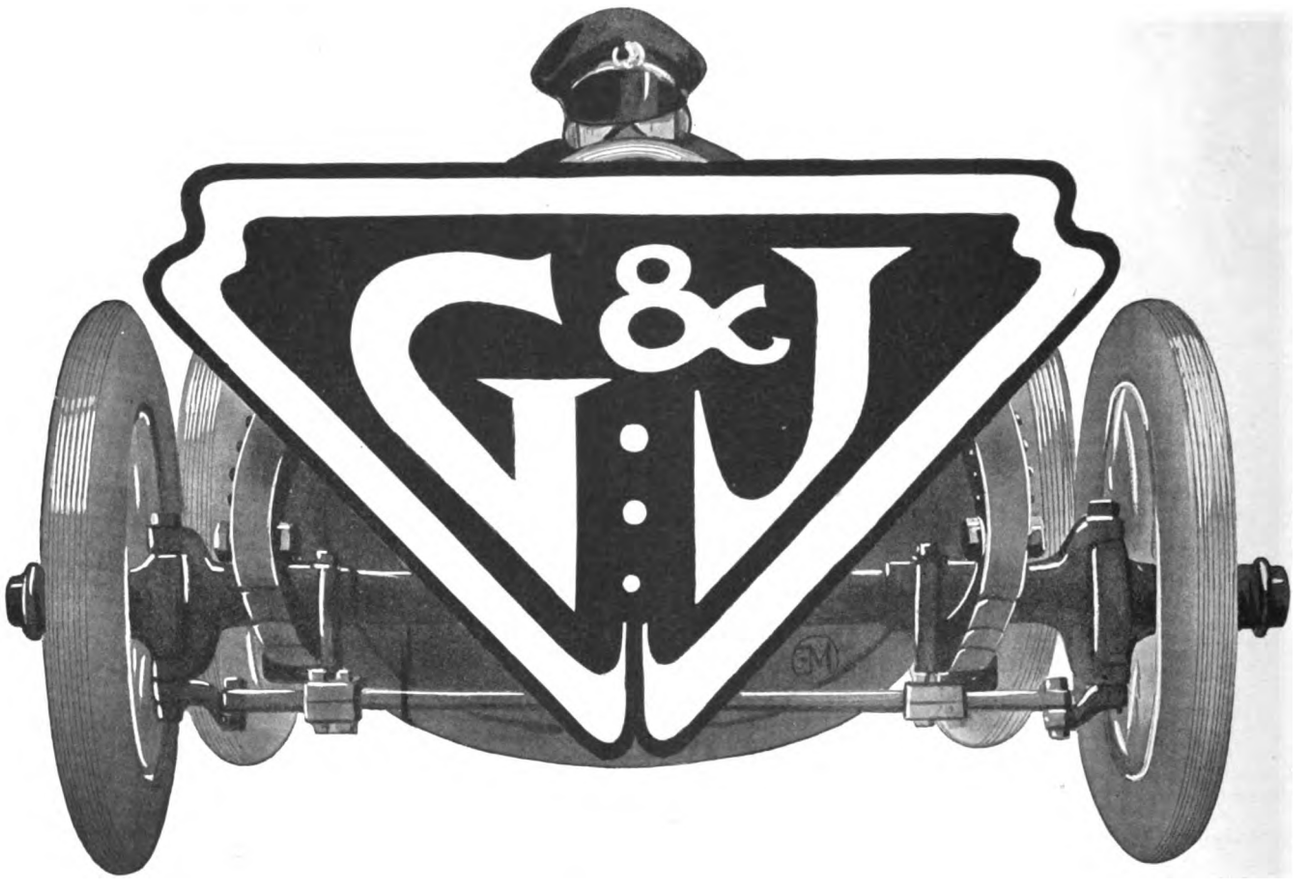
Sold with the unqualified guarantee of a manufacturing organization with a half-century-old reputation to sustain.

Catalogue mailed on request.

CORBIN MOTOR VEHICLE CORPORATION,
Chestnut Street,
NEW BRITAIN, CONN.

NEW YORK AGENCY, 4 West 38th St.
BOSTON AGENCY, 163 Columbus Ave.

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Thread Fabric Tires.

NO LUGS.

Easiest to Handle,
No Pinched Tubes,
No Edge Cutting,
No Blistering,
Most Durable.

So resilient that they save one-fourth the power.

We have printed a booklet which tells all about Thread Fabric Tires. Better send for it.

G & J TIRE CO.

Indianapolis

549-625 E. Georgia St.

CHICAGO, 429 Wabash Ave. **DETROIT, 247 Jefferson Ave.**

CLEVELAND, 337 Huron St. **BOSTON, 43 Columbus Ave.**

Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded

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TRADE GOSSIP OF THE WALTHAM-ORIENT.

Thirty new agents this month already, is not a bad record.

* * *

We booked, one day last week, orders for forty-one cars.

* * *

16 horse-power cars are nearly holding their own in orders booked, with 20 horse-power cars. One reason seems to be that in no other air-cooled car of this horse-power or less, can you find these popular and actual trade-bringing features:

Positive air-cooling, 3 forward speeds, direct drive, sliding gear transmission, 4 cylinders, tandem, running lengthwise of the cars.

* * *

Come to think of it, what **WATER-COOLED** light touring cars combine the last four named advantages? Every nomination entitles the nominator to a prize.

Nearly everybody knows that the cylinders should be placed lengthwise of the car, so as to take advantage of the direct drive, and avoid the long chain drive.

* * *

Is there anybody who disputes the advantages of positive air-cooling by a fan, so that the engine when running can be kept cool, even though the car is not in motion? Our orders do not indicate it.

* * *

Have you seen our magazine advertising? It has got a different slant from the other kinds, and it keeps a big solid room full of stenographers busy answering letters that pour in from our publicity campaign.

* * *

There are the names of a good many people right in your territory—wherever you are—who want the particulars about Orients. Who is going to sell them?—nearly 9,500 interested people up to the date this is written (March 20th).

ORIENT TOURING CARS

Model E, Touring Runabout (semi-racing body), 16 H.-P..	$1500
Model E, with detachable Tonneau, 16 H. P.	1650
Model F, Light Touring Car, with Tonneau, 16 H.-P.....	1650
Model G, Touring Car, 20 H.-P.....	2000
Model de Luxe, Touring Car, 20 H.-P.....	2250

ORIENT BUCKBOARD LINE

Buckboard, Model A, 4 H.-P.....	$375
Surrey, Model B, 4 H.-P.....	450
Runabout, Model C, 4 H.-P.....	475
Tonneau, Model D, 4 H.-P.....	525

WALTHAM MANUFACTURING COMPANY,

Members of Association of Licensed Automobile Manufacturers.

Factory: WALTHAM, MASS. **General Sales Offices: 44 Broad St., NEW YORK.**

Autocar Type VIII $1400

A Wonderful Value.

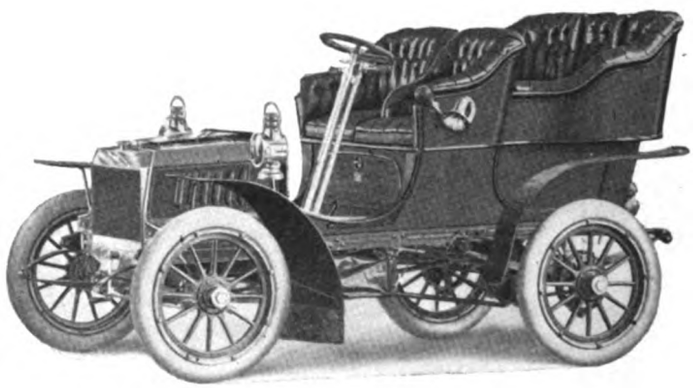
Type VIII Autocar at $1400 represents a wonderful automobile value. This type is the foundation of the Autocar's enviable reputation. It is a car built upon honor throughout. There is nothing experimental about it—nothing uncertain in its construction. During 1904 Type VIII was tested on all sorts of American roads—under all kinds of conditions. It has proved its reliability and efficiency so well as to put Autocar Type VIII in the very front of its class.

Last season Type VIII was sold for $1700 and was considered an unsurpassed value. The price of Type VIII is now $1400 because, having built this model for so long we can now build it more economically. For the man who wants a thoroughly reliable four-passenger car at a moderate price, Type VIII at $1400 is his opportunity.

Catalogue giving full description of Type VIII, Type X Runabout, and Type XI Four Cylinder Car, with dealer's name, sent free upon request.

THE AUTOCAR COMPANY, Ardmore, Pa.

Member of the Association of Licensed Automobile Manufacturers.



Specifications, Type VIII:

Horizontal two-cylinder opposed engine—no noticeable vibration. Twelve actual horse-power. Oiled automatically. Water cooled.

Transmission, sliding gear type. Three speeds forward and a reverse. Ball bearing, shaft drive. No greasy, gritty chain. Front and rear construction has ball bearings throughout. Gasoline tank holds 10 gallons—sufficient on good roads for 200 miles.

Tonneau is removable. Front seat divided. Engine and transmission case are accessible from above without disturbing body.

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TRADE MARK TRADE MARK

Goodrich Automobile Tires Embody The Integral Construction.

The Goodrich tire is built as a unit from the fabric foundation to the outside of the tread.

Every part indissolubly connected and sharing the working strain with every other part.

The most powerful construction known to tire builders and capable of resisting the greatest amount of **weight, speed, friction** and **pressure.**

Made and vulcanized entire, thus eliminating all weak points.

Our process requires a **single vulcanization,** which is accomplished by subjecting the tires for a **long time** to a **low degree of heat.** We thus retain the full strength of the fabric, and impart to the rubber a toughness and lasting quality possessed by no other tire.

On account of this extreme toughness, Goodrich tires seldom require retreading.

New treads, however, can readily be applied to our tires. All branches fully equipped to do this character of work to the highest degree of perfection. Absolute satisfaction guaranteed.

THE BAILEY "WON'T SLIP" TIRE. Regular Goodrich construction, but provided with the Bailey "Won't Slip" Tread. Prevents slipping, slewing or skidding.



Rims branded in the channel with this copyrighted mark have been inspected and pronounced perfect. We guarantee our tires only on rims so branded.

THE B. F. GOODRICH COMPANY,

AKRON, OHIO,

NEW YORK, 66-68 Reade St. and 1625 Broadway.
BUFFALO, 9 W. Huron St.
SAN FRANCISCO, 392 Mission St.
CHICAGO, 141 Lake St.
BOSTON, 161 Columbus Ave.
CLEVELAND, 420 Superior St.
DETROIT, 80 E. Congress St.
PHILADELPHIA, 909 Arch St.
DENVER, 1444 Curtis St.
LONDON, E. C., 7 Snow Hill.

TRADE MARK TRADE MARK

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"ONE GOOD CYLINDER

in a Cadillac is better than two poor ones usually found in most cars," is the way one Cadillac dealer, who resides in the mountains, and who last year sold twelve cars of a prominent two-cylinder make, puts it up to his trade. We have never said much about the advantages of single cylinder horizontal construction as compared with the double opposed type, believing as we do that when buyers know all we do of the difficulties encountered in this type they will then readily under stand our reasons for not building a two cylinder horizontal engine.

In the Cadillac single cylinder cars we give the owner a machine with ample power to carry the load for which the car is built, at a good rate of speed over any road, and at a minimum cost for operating and up keep expense. In other words, more mileage for money invested than he can get from any other car at any price.

When you buy a Cadillac you get the car you ought to have at the price you ought to pay.

CADILLAC AUTOMOBILE COMPANY,

Members of Association of Licensed Automobile Manufacturers.

DETROIT, MICH.

You may pay more than the price of the Mitchell



but it will not assure you a car that will do more or do it more satisfactorily,

You cannot pay less and get anything like what we offer in our car.

It's a bold statement, we know, but if you want evidence in support of it, drop us a line.

MITCHELL MOTOR CAR COMPANY, - Racine, Wis.

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APPERSON



30—40—50 HORSE POWER FOUR CYLINDER CARS.

TWELVE YEARS OF ACTUAL EXPERIENCE IN BUILDING GASOLINE CARS.

Our Four Cylinder Cars have been tested for three years, and we offer no long list of excuses called improvements.

Our cars have always run well, and our customers are pleased.

WRITE FOR OUR LARGE CATALOGUE.

APPERSON BROS. AUTOMOBILE CO., Kokomo, Ind.

Branches: 66 W. 43d Street, New York; 43 Columbus Avenue, Boston; 394 Wabash Avenue, Chicago.

Members Association of Licensed Automobile Manufacturers.

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THE INCOMPARABLE WHITE

THE CAR FOR SERVICE.

Don't Make the Mistake

of choosing your automobile until you have examined and ridden in a White. Remember that the White is unlike any other car.

The Unique Properties

of absolute silence, simplicity, ease of control and supreme reliability place the White in a class by itself.

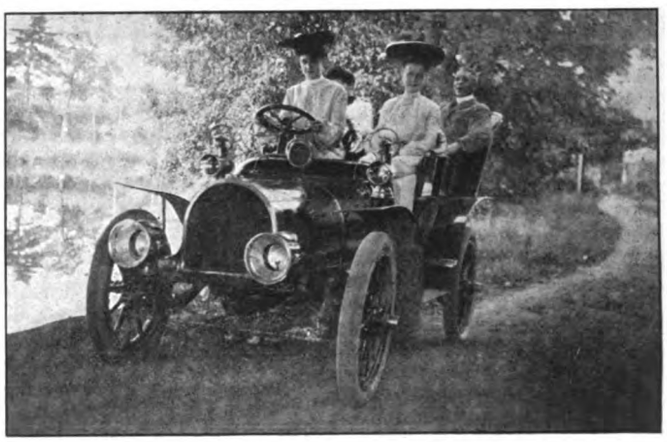
Write to us for literature.

WHITE SEWING MACHINE COMPANY,

CLEVELAND, OHIO.

DUQUESNE

"HALF OF THIRTY-FIVE."



A Few Years Ago the First Men of America wound their watches with a key—no self respecting man would tolerate such a crude contrivance today.

Today dignified professional and business men make a spectacle of themselves in the public streets cranking the motors of their automobiles! The operation is not only undignified, it soils the clothes and is dangerous.

The Duquesne Car starts from the seat—every time. The simple little device that accomplishes this in such a clever mechanical way is to the automobile what the stem-winding device was to the watch—it will revolutionize automobile building and marks the passing forever of the crude starting crank.

The Duquesne equipment does not include a crank—it is not necessary. It's a relic of the days that were—the days of primitive automobile building.

Hereafter discriminating buyers will insist on a similar device on all cars—other makers will have to "copy" this DUQUESNE feature as they have others.

The Price? 4-Cylinder Air-Cooled, 16-21 H.P. **$1,750** "HALF OF THIRTY-FIVE"

Duquesne Construction Co.,

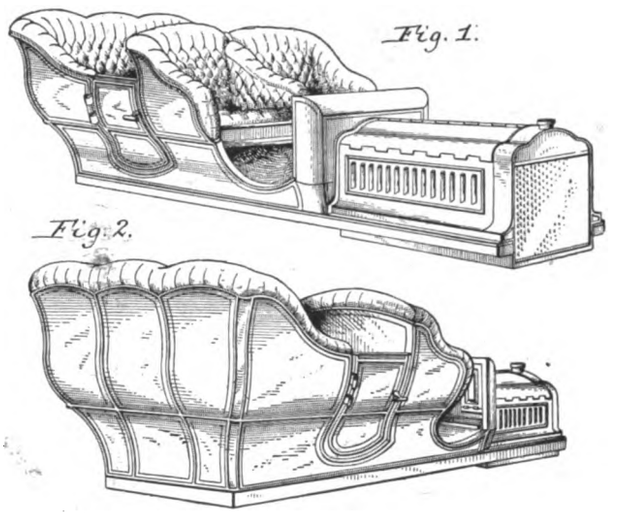
Manufacturers, JAMESTOWN, N. Y.

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These are the lines that make the

THOMASFLYER

A DUST PROOF AUTOMOBILE.



A Dustless Tonneau is one of the original and exclusive features of this—America's Most Popular Automobile.

E. R. THOMAS MOTOR CO.,

1210 Niagara Street, BUFFALO, N. Y.

Members Association of Licensed Automobile Manufacturers.

SPEED LUXURY

Every Word a Plain Truth.

Logan

"That Car of Quality."

SAFETY COMFORT

Logan Construction Co., Chillicothe, Ohio.

Hand Book

OF GASOLINE AUTOMOBILES ISSUED FOR THE INFORMATION OF THE PUBLIC WHO ARE INTERESTED IN THEIR MANUFACTURE, SALE AND USE.

This new edition of this handsomely bound and artistically printed book, containing illustrations of about 125 gasolene cars, will be ready for mailing about March 15th, 1905. The products of the principal manufacturers throughout the United States of America and the Importers of gasolene machines are shown by illustrations and specifications. These specifications form a series of the leading questions that arise in the mind of the purchaser, with the answers thereto in red ink. The questions being uniform, the ease of comparison is obvious, and the purchaser is enabled to select the machines which are best suited to the service required, to his personal taste, or the means at his command.

The 1904 edition is now out of print.

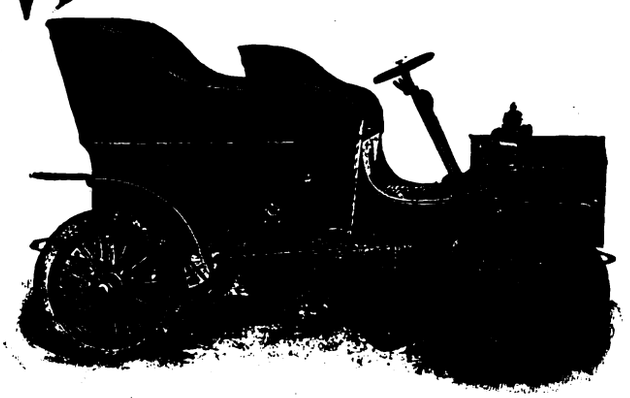
Sent upon receipt of 6 cents in stamps for postage.

Association of Licensed Automobile Manufacturers,

Room 1009. No. 7 EAST 42nd STREET, NEW YORK.

THE MICHIGAN

MODEL D. $1100.



Carries Five persons without crowding. Not an Experiment but a Proved Success.

Has so many good points only our complete catalog will give you any adequate idea of them.

SEND FOR IT.

MICHIGAN AUTOMOBILE CO., Ltd., Kalamazoo, Mich.

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The GASAULEC

A 40-45 H.P. five passenger, side entrance, gasolene touring car of the highest grade

Without a starting crank.
Without a "clutch."
Without "change speed gears."
Without cams, rocker shafts, tappets or valve gearing.
Without the usual confusing multiplicity of operating levers.
Without complications.

Every movement of the motive power and the car, from a state of absolute rest, forward at any speed or reverse, controlled by one simple foot pedal having only forward and backward action. Positively no other speed or movement controlling device of any kind on the car.

Double brakes. Irreversible steering wheel. The GAS-AU-LEC is the simplest car in world and the easiest to operate and maintain.

Not an experiment, but a success.

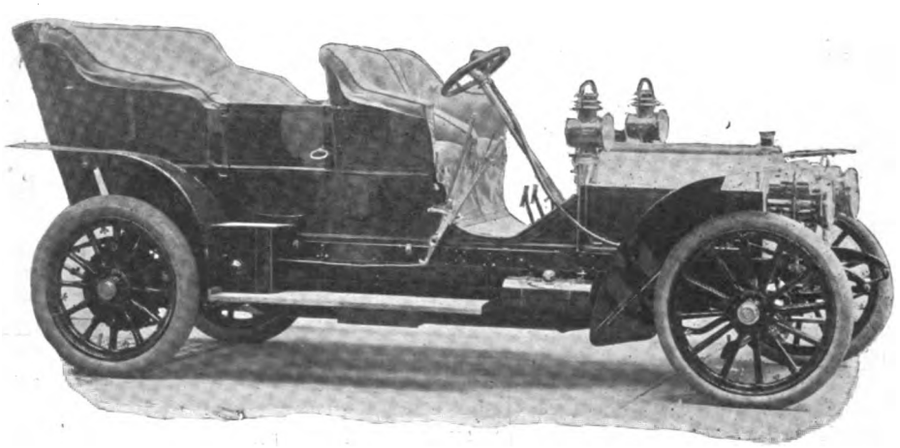
Not a freak, but a practical revolution.

VAUGHN MACHINE COMPANY,

HAMILTON S. CORWIN, *President.* PEABODY, MASS., U. S. A.

MERCEDES 1905 MODELS.

A FEW DELIVERIES LEFT.

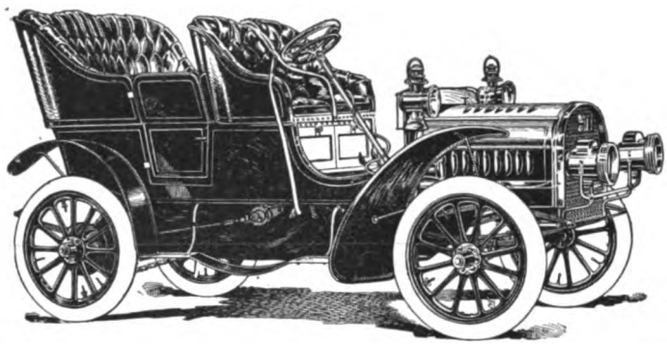


Orders may be placed with us at **69 Wall Street, New York,** or with **SMITH & MABLEY, the Mercedes Showrooms, 38th Street and Seventh Avenue.**

ALLEN, HALLE & CO., American Representatives of C. L. CHARLEY, Paris.

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Rambler



SURREY, TYPE ONE

$1,350

18 H.P. *Immediate Delivery.*

Complete with brass side, tail and two gas headlights with separate generator, brass horn, drop forged wrenches, oilers, pump and repair kit.

Other Models, $750, $850, $2000 and $3000.

The low cost of maintenance is one of its most attractive features. No automobile has fewer and simpler working parts. So few and so simple are these parts that they may be seen and understood in a moment. The long, heavy, pressed steel frame, the rigid cross members supporting the engine, the perfectly balanced reciprocating parts, the full elliptic springs, large tires, non-friction metal and ball and roller bearings reduce wear and tear to the minimum.

With the elimination of unnecessary parts and a direct transmission of power, fuel is economized without a sacrifice of ability to go at comfortable speed wherever roads are fit for travel.

Disorders are so infrequent, and so easily repaired when they occur, that one may dispense with the help of a chauffeur. It is a machine that women can and do handle and care for themselves. We can point out instances.

BRANCHES: BOSTON, 145 Columbus Ave. PHILADELPHIA, 242 North Broad St. CHICAGO, 302-304 Wabash Ave.
NEW YORK AGENCY: 134 West Thirty-eighth St.

REPRESENTATIVES IN OTHER LEADING CITIES.

Main Office and Factory, Kenosha, Wisconsin.

THOMAS B. JEFFERY & COMPANY

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THE MOTOR WORLD.

A WEEKLY JOURNAL DEVOTED TO THE AUTOMOBILE AND KINDRED INTERESTS

Volume IX. New York, U. S. A., Thursday, March 23, 1905. No. 26

LAMP MAKERS POOL ISSUES

Join Forces with Atwood to Test Validity of the Bullet Design Patent.

It develops that there are far more interests involved than appears on the surface in the suit brought in the United States Circuit Court, in Philadelphia, against Charles E. Miller, the well-known wholesaler, by Gray & Davis for alleged infringement of the design patent of their "Bullet" lamp.

Miller's alleged infringement consists in having sold an Atwood lamp, of the so-called bullet shape, and the Atwood Mfg. Co., of course, appear as sole defendants. As a matter of fact, however, several other lamp manufacturers have pooled issues with Atwood to test the patents in question, No. 764,396, and design No. 37,301, and are standing together in the matter and will share in the defense.

Fire Never Touched Them.

Fire which on Tuesday night destroyed a frame building owned but not occupied by the International A. & V. Tire Co., Milltown, N. J., led to a report that a portion of that concern's tire plant had been badly damaged. This is not the case, however, as the International factory was not even scorched. The building destroyed was leased and used by wholly different people.

Wanamaker to Move Uptown.

John Wanamaker has felt the necessity of getting into the thick of the uptown business district. Accordingly, on or about May 1 he will take possession of part of the Brewster Building, at Forty-ninth street and Broadway, where his salesroom will be thereafter located, and where, of course, Fords and Premiers will be displayed.

To Continue Darracq Business.

The death of F. A. La Roche, president of the American-Darracq Company, will not interfere with the continuation of the business. Arrangements to that end have been perfected, G. M. McWilliams being now in control of the business affairs of the company.

Boston Show Boomed to the End.

Interest in the Boston Automobile Show continued of the feverish variety until the close on Saturday night last. The average paid attendance was 7,000 per day, excepting, of course, the opening night, when the record-breaking total of 47,500 persons passed through the doors.

There was considerable business done, not only locally, but in a trade way, many agents from Maine, New Hampshire and Vermont, where the season opens later than in any other part of the country, visiting the show to make connections for the year.

Screw Plants Bring Big Prices.

The Standard Screw Co., of Detroit, has purchased the stock of the Hartford Machine Screw Co., Hartford, Conn., and Western Automatic Machine Screw Co., Elyria, Ohio, which latter was a subsidiary of the Hartford Co. Both have been making a number of small parts for the automobile trade. The $100 shares of the Hartford concern, which has been paying dividends of 10 per cent. a month, brought $1,000 per share and of the Elyria plant $285.

Michigan Opens in Kansas City.

The Michigan Automobile Co., Ltd., of Kalamazoo, Mich., are turning out a very handsome car for the use of doctors and others. This is a single seat rig, and is their regular Model D car with tonneau removed. In place of the tonneau there is a shapely box, giving the rear of the car a square effect, which adds much to its appearance.

Waltham to Build Wagons.

The Waltham Mfg. Co. is preparing to go extensively into the production of commercial vehicles. To that end they have recently been acquiring a number of patents covering the several types, among them a gasolene-electric system.

Crompton Sustains Fire Loss.

The Crompton Motor Car Co., Worcester, Mass., which built steam cars on a small scale, was among the sufferers from the fire which wrecked the Crompton Building on Friday last. No estimate of the damage is given.

DEPARTURE IN JACKETING

Philadelphian Strikes Out in New Direction—How he Does it and the Objects Sought.

The cooling problem is one of the most unsettled of all the questions which have arisen, and its ultimate solution for the automobile motor is highly problematical. For a long time the utility of the independent copper water jacket has been recognized by designers, and not a few attempts have been made to perfect its application to a degree which would make possible its general adoption. These efforts have been only partially successful, however, and though some engine builders have experimented to no purpose, others have been better prospered, and are using the principle to advantage, as, for instance, in some of the larger Panhard models and the Pope-Toledo.

The arguments in favor of this method of construction are: that a better cylinder casting is secured than would otherwise be possible, since the form is much less complex, and simpler cores are used, thus making cleaning and inspection easier and more thorough; that the weight of the motor is considerably reduced; that the jackets are easily demounted for cleaning, inspection or repairs; and that the damage resulting from freezing is greatly reduced- since the cost of replacing the jacket alone is slight compared to that of renewing the entire cylinder.

It is argued, on the other hand: that it is extremely difficult to secure tight joints between the jacket and cylinder, and that, notwithstanding the reduction in the cost of the cylinder casting alone, the expense of the spun jacket and the difficulties connected with fitting it to the cylinder are so great as to cause a slight increase in the cost of the motor when completed. But, however just the criticism may be, it would seem to a casual observer that an unfavorable attitude toward the system were due quite as much to prejudice and unskilled effort to apply it as to any inherent defect in its theory. For, taken at its face value alone, it seems a long step in advance of the more common practice.

Up to the present time all effort in this

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line has been concentrated on the independent cylinder arrangement, but there is now being brought out in the Quaker City a quadruple motor of twin cylinder construction, to which the principle has been applied with apparent success.

The cylinders are 4 1-16 by 5 inches, and this, with the normal speed of 900 revolutions per minute, make the rating of twenty horsepower seem perfectly just. The jackets are spun into dome shape and entirely enclose the cylinders and valve pockets. Each is provided with six openings, four for the plugs which cover the valves of the two cylinders, and two for the inlet and exhaust piping which leads to siamesed ports. The metal is beaded over around these openings, and the parts adjacent to them are flanged and screwed into place. The joint at the base of the jacket is made by slipping a cast iron ring of slightly trapezoidal section over the outside and thus forcing the jacket tightly against the main casting. The ring is held in place by screws halved between it and the cylinders. The construction of the pistons, rods and crank is "regular," the latter being lubricated by ring oilers, and the former by splash. The crank case is wholly of aluminum and is in three parts. The upper portion is heavily ribbed, and provided with four supporting arms of channel section; the lower part contains the end bearings of the crank shaft, and is removable without interfering with any of the mechanism, while the front end of both portions is closed by a removable head, which facilitates the dismounting of the cam shafts. The latter are driven by two uninclosed gray fibre gears, meshing with a steel pinion on the crank shaft. They are of sectional structure, the cams being keyed in place, and spaced by means of steel tubes, which are slipped over the end of the shaft. The four bearings in which they run are fitted with large bushings, so that they may be withdrawn bodily from the end of the case, the former remaining in place. They are entirely inclosed in the crank case, and hence get the full benefit of the oil splash. The cam lifts are of hardened steel, without rollers or springs, and work in guides which are bolted to the case; the valves themselves are, as would naturally be expected, opposed and interchangeable.

The gas is supplied by an automatic float feed carburetter having the usual diaphragm regulation, and is controlled by a water governor similar in principle to that employed on certain of this year's Panhard cars, but not at all a derivative of it. The ignition is accomplished by the usual quadruple jump spark system, the internal wipe contact commutator being located at the back a trifle above the top of the cylinders, on a vertical shaft driven from the exhaust shaft.

An article which recently appeared in these columns pointed out the marked advantages of inclosing the several cylinders of a multiple motor in a common water jacket, instead of keeping them entirely separate from one another. For, as was shown, laying aside all purely structural considerations, there would accrue an economy in over all length, since the cylinders could be set more closely together, an increase in jacket capacity without a corresponding increase in outside measurement, and a simpler and more effective arrangement of the circulating system than would otherwise be possible. It was further shown that while such an arrangement would be, in theory at least, as applicable to three or four cylinders as to two, that fickle dame, common practice, had as yet failed to sanction its extension beyond the twin-cylinder formation.

Hence it will be extremely intersting to note the success of this new departure, as its permanent adoption may forecast an ultimate extension of the separate jacket to the multi-unit cylinder construction.

The engine in question is after designs by L. S. Chadwick, and is made by the Fairmount Engineering Co., of which he is president.

Among the Retailers.

A. P. Shumaker will build a garage in the East End, Pittsburg, Pa. It will cost at least $25,000.

Frank A. Sanford, who some two months since secured the metropolitan agency for the Yale car, has finally located himself at No. 1,653 Broadway. It is in the heart of the automobile district.

The Brackett Automobile Co., of Manchester, N. H., has leased the Palace stable building at No. 486 Chestnut street. The floor space is 6,000 square feet, which ought to give them plenty of room.

Articles of incorporation of the Minneapolis (Minn.) Automobile Dealers' Association were filed last week. The capital is placed at $10,000, and E. H. Moulton, H. E. Pence and T. C. Jordan are named as incorporators.

Edward Keller and Floyd Needham have leased the Johnson & Landis garage at Decatur, Ill., and will take over the business of the latter firm. The new concern will be known as the Keller-Needham Automobile Co.

To keep abreast of the times the James Foundry Co., at La Crosse, have taken on automobiles. The James Foundry Co. will sell cars and conduct a garage. The company boasts of the best equipped machine shop in the Middle West.

The Riddell Automobile Co., formerly W. J. Riddell, has been incorporated at Des Moines, Iowa, with $25,000 capital. W. J. Riddell will continue to manage the business as president and treasurer. The firm is located at Nos. 720 and 722 Locust street.

The Essex Automobile Co. is the name of a new concern that will sell, repair and hire automobiles in Newark, N. J. The garage, repair shop and salesroom are located at Nos. 9, 11 and 13 Lombardy street. The company will handle the Ford, Jackson and Premier cars.

The recently organized Iowa Automobile & Supply Co., of Des Moines, Iowa, has leased 11,000 square feet of floor space opposite the Savery Hotel, to be utilized for display, storage and repair purposes. The company has taken the State agency for the Rambler, Marion, Queen, Gale and Acme cars.

Ground has been broken for the garage to be built in Plymouth avenue, Rochester, N. Y., by the United States Automobile Co. The building will be 135x140 feet and will cost $20,000. The company has also built another garage on Park avenue. The latter building is 80x100 feet, and is built with a view of enlargement if necessary, the site being 160x385 feet.

No Damages for Grenfell.

Justice Barnard last Friday instructed the jury in Circuit Court No. 1, at Washington, D. C., to return a verdict for the defendant in the case of William Grenfell against the Washington Electric Vehicle Transportation Co.

The suit was for $10,000 damages for injuries received by the plaintiff in an explosion of gasolene which had been left outside the establishment of the defendant company, and taken therefrom by a number of small boys, who threw it upon Grenfell. The gasolene was ignited by a burning candle in a playhouse used by the boys. The plaintiff contended the automobile firm was careless in letting the boys get hold of the fluid.

Queer Cause of an Explosion.

An explosion of gases, supposedly those of gasolene and sewer gas combined, under the new concrete turntable in the garage of Frank Bull, Wisconsin street, Racine, Wis., one day last week, caused considerable excitement and some little damage. A workman cut a hole in the base at one side of the turntable, and it is thought a spark from the cold chisel ignited a congestion of gases under the floor. The explosion lifted the three-ton block of concrete and steel off its track and hurled it to one side. A new 40 horsepower Pope-Toledo car, which was on the turntable, was considerably damaged. Two workmen were injured, though not seriously.

"E. V." Opens Hartford Salesroom.

For the better accommodation of the public of Hartford and vicinity, the Electric Vehicle Company has opened a commodious down-town salesroom at 372 Asylum street, one block east of Union station. The new quarters are in charge of G. E. Risley and F. E. Dayton, of the sales department. Incidentally, the company's offices at the Laurel street factory have recently been remodeled and a large reception room provided for visitors.

To Sell American Cars in Denmark.

Carl Simonsen, of Simonsen & Nielsen, Copenhagen, Denmark, who has been in this country for the past fortnight, while here secured the agency for an American line of cars. He sails for home to-day.

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ANTICS OF A MALCONTENT

Expensive Extremes Employed by a Disgruntled Buyer to Injure a Car's Reputation.

It probably is safe to say that the automobile trade has had more than its share of disgruntled customers. The very nature of the vehicle, coupled with the predisposition of some men to fancy that they "know it all," makes for such a state of affairs; as usually is the case, such men charge their own shortcomings to the car, and the more vicious of the ilk have on occasion resorted to amazing methods to "get even."

Probably the most despicable effort of the sort came to light during the week of the Detroit show.

The disgruntled individual in the case, a Detroiter, had, after visiting the factory, last August, purchased a four cylinder car of reputable Western manufacture.

From the date of purchase until the present the maker's books show a total charge for replacement of parts, and so forth, of $92. They thought no more of the car than of the others they had produced until early in January, when they were astonished by the receipt of a letter demanding an immediate return of the purchase price of the car. The demand was coupled with all manner of dire threats in the event the money was not forthcoming. The answer of the company was prompt and to the point; it was, in fact, that, while they disliked to see any customer of theirs wearing a fool's cap, at the same time, if that was his desire, it was certainly his privilege to do so, so far as they were concerned. The letter wound up with the statement that under no circumstances would they comply with any such demand. They heard no more of the matter until during the Detroit show, when they beheld the car covered with signs reading:

"This is a —— car. A bum machine. Cost me first month for repairs, $369; second month, $289; third month, $186," etc, giving, of course, the name of the machine. The owner had hired an express wagon to tow the car about the streets, and at the same time wrote the company what he had done, and promised to repeat the performance at Chicago during show week, and later on in most of the large cities in the country for a period of sixty days.

No attention was paid to his communication and no attempt whatever made to interfere with his actions. During the week of the Chicago automobile show, however, the company's Chicago agent was called up by telephone and advised that the car was at the depot and would be run about the streets unless some satisfactory arrangement could be made to withdraw it. Savoring strongly as it did of blackmail, the answer of the agent was, in effect, that if the customer would call at his store he would receive satisfaction so warm that he, at least, would not drive that car, or any other, for some days to come.

Little more was heard of the matter, and while it is stated that the car did actually start with the signs in question, it was withdrawn, or at least little was heard or seen of it during the week, its owner evidently having become tired of his job or awakened to a sense of the futility of it.

The Week's Incorporations.

Augusta, Me.—C. O. Q. Automobile Co., under Maine laws, with $500,000 capital. Corporator—I. L. Fairbanks.

Chicago, Ill.—Chicago Automobile Service Co., under Illinois laws, with $10,000 capital. Corporators—Lewis W. Parker, Henry M. Hagan and Charles W. Kefer.

New York City, N. Y.—Multiplex Power Co., under New York laws, with $1,000 capital, to manufacture motors. Corporators—H. Hollmann, C. Weik and L. Storck.

New Orleans, La.—Motor Co., Ltd., under Louisiana laws, with $25,000 capital. Corporators—Bishop C. Perkins, William P. Luck and Thomas S. Witherspoon.

San Antonio, Tex.—Johnson-Schofield Automobile Co., under Texas laws, with $10,000 capital. Corporators—H. E. Johnson, George L. Schofield and Carrie L. Schofield.

Portland, Me.—Autobed Co., under Maine laws, with $50,000 capital, to make automobiles. Corporators and officers—President, H. P. Sweester; secretary and clerk, L. L. Hight.

Westfield, Mass.—Hampden Automobile Co., under Massachusetts laws, with $10,000 capital, to sell automobiles. Corporators—Henry R. Barton, Dr. George H. Jaynes and Myron A. Gilman.

Columbus, Ohio.—Uneedme Tool Co., under Ohio laws, with $5,000 capital, to make tire removing tools. Corporators and officers—President, Joseph Schonthal; vice-president and manager, M. M. Phenice; treasurer, Dr. C. M. Taylor; secretary, Dr. C. A. Howell.

Locks Gasolene Supply Against Meddlers.

Automobile owners and drivers have experienced considerable annoyance at having cars tampered with by unauthorized persons, and various devices have been talked of to lock a car against all but the owner. These have usually taken the form of lock switches on the electric circuit.

Eben J. Hill, jr., superintendent of the Norwalk Iron Works, at Norwalk, Conn., has, however, patented an idea which he thinks will be a valuable addition to every automobile. It is a key lock for the gasolene supply. The lock fits on the side of the gasolene pipe, taking the place of the usual shut-off at the side of the engine.

It is a small brass device, and is turned with a special key, no two keys being alike. One of the features of the arrangement is that the key cannot be taken from the lock until the gasolene supply is entirely shut off. The device is simple, the key being inserted in the lock and the gasolene turned on. The locks are perfectly tight, being tested by gasolene under a pressure of ninety pounds.

TOOLS THAT "LOSE THEMSELVES"

Petty but Aggravating Evil that Afflicts Garages—The Efforts to Combat it.

A complaint which very frequently comes to the ears of garage owners and repair men is that tools and accessories are lost from machines left in their care. Similar complaints come from chauffeurs, and a counter wail now and then from mechanics who mourn the loss of a pet tool of some sort. These as well as certain most astonishingly irregular results in the monthly account of oils and other supplies which are more or less accessible to all, point to an alarming inability to distinguish the right of property ownership.

It seems at first a trifle strange that a workman would rather take a wrench from the toolbox of the machine upon which he is working than to cross over to his bench and get its counterpart, which happens to be his own personal property. But it is not at all to be wondered at that when the job is finished it should go into his kit, along with the other tools, because it looks like his own and because mechanics are proverbially absentminded in this respect. They are universally shy of tools when they go on a job, and as universally overplenished when they leave. And as they seldom buy for cash the deductions are obvious. As to the chauffeurs, quite the same conditions are to be noticed. They are forever loosing things, tools, parts, gloves, even clothing; yet their stock is never wholly wanting. And it is evident that if the new things have been bought, their wages have not been visibly diminished in consequence.

Now all this points to a condition of petty dishonesty, which, if let go, may ultimately breed a great deal of trouble for the garage man and the owner. But what to do?

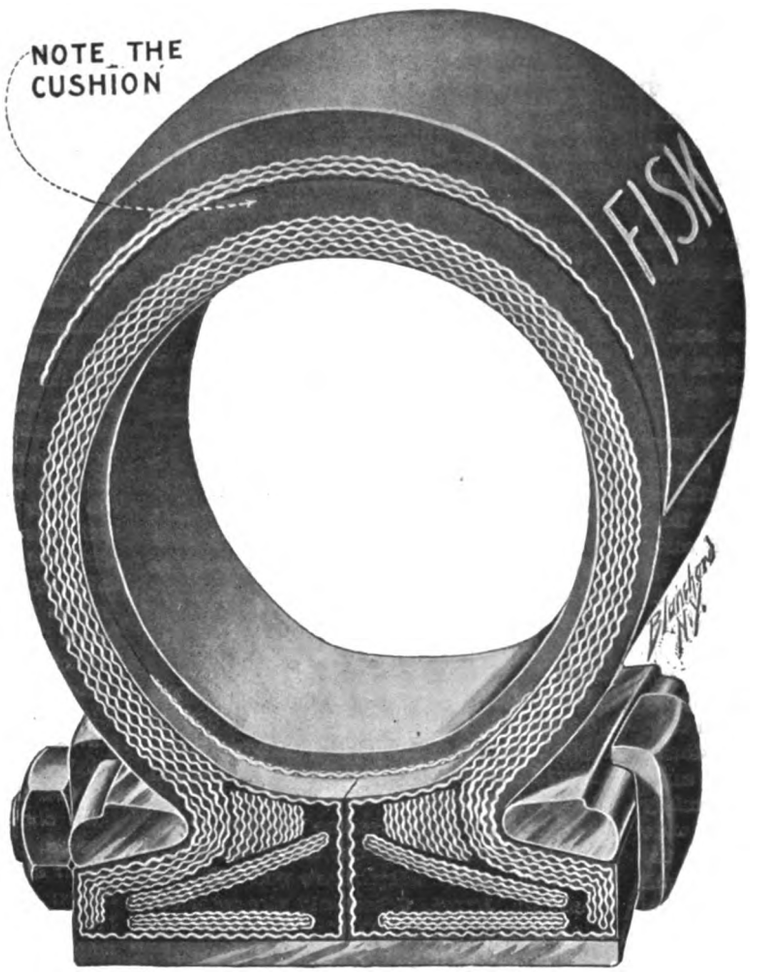
Some have tried imposing a fine of $5 in every case in which it is proven that the contents of a car have been tampered with. In some cases the result has been noticeable at once, while in others a disposition to listen to excuses of mitigating circumstances and to deal gently with pet offenders has done more harm than years of rigid enforcement could undo. But, take it on the whole, it would seem that thorough protection of the car owner's rights could only be obtained through hard, well enforced discipline. And as to the trouble between the men themselves, many a foreman has learned by bitter experience that it is best to let all those little bickerings which are essential to the wage earner's life take care of themselves and not attempt to arbitrate between them.

To Take Over Chain Business.

The Diamond Chain & Mfg. Co., Indianapolis, Ind., which was recently incorporated under the laws of that State, will take over the chain manufacturing business of the Federal Mfg. Co., for which purpose it was organized. The negotiations are now being concluded.

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The Only Real Automobile Tire.



NOT
MERELY AN ENLARGED BICYCLE TIRE,

but a tire designed, developed and constructed specially for use on automobiles, and supplied with a flat rim (don't overlook that), and a fastening in keeping with the design of the tire. And what is very much to the point, it is a tire and a fastening that have been tried ruthlessly for two years and found not wanting.

If you would know more about it, permit us to mail you a copy of our booklet.

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BRANCHES: New York, 784-786 Seventh Ave. Chicago, 1251 Michigan Ave.

BOSTON, 226 Columbus Ave.
SPRINGFIELD, 40 Dwight St.
PHILADELPHIA, 828 Arch St.
ATLANTA, 103 N. Pryor St.
SYRACUSE, 423 So. Clinton St.
BUFFALO, 893 Main St.
CLEVELAND, 318 Euclid Ave.
DETROIT, 254 Jefferson Ave.
MONTREAL, CANADA
ST. LOUIS, 3908 Olive St.
OMAHA, 1116 Farnum St.
KANSAS CITY, 1330 Main St.
MINNEAPOLIS, 704 Hennepin Ave.
DENVER, 1534 Glenarm St.
SAN FRANCISCO, 114 Second St.
LOS ANGELES, 1034 So. Main St.
LONDON, ENGLAND

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Striking at the Overcharge Evil.

One of the very earliest evils which the automobile industry encountered was chargeable directly to those engaged in it; i. e., the practice of charging for a repair job, not according to the work performed, but as much as it was believed the car owner would stand.

This "get-rich-quick" practice is not now so general as once was the case, but it still obtains to an appreciable extent. There are men in the trade who will not see that in adding unnecessarily to the cost of a car's upkeep, they are standing in their own light and creating an undesirable advertisement. They are sacrificing the future for the present. The idea that it "costs a mint" to maintain an automobile is already too prevalent.

While it probably is one of those great questions which time will solve, there are manufacturers who have given it thought and are seeking to hasten the solution. They cannot, of course, control the charges their agents may impose for repair work, but at least one of them lessens greatly, if not entirely, the chance of owners of his cars being "gouged" in the purchase of parts for replacements. Every car that is shipped is accompanied by a booklet cataloguing each separate part and specifying the price thereof. With knowledge that such information is in the possession of his patron, the agent will scarcely dare inflate the price of any part.

Another manufacturer seeks to minimize the overcharge evil by making an almost direct bid for the "overhauling" trade. He is encouraging users of his cars to send them to the factory for overhauling during the winter months, and names a price for the work that makes the encouragement hard to resist. The manufacturer himself prefers to do such work on his cars, and generally, and not unnaturally, the owner would rather have it done at the factory. It assures greater satisfaction all around.

That this state of affairs will not be relished by dealers and repairmen goes without saying. But knowledge that a beginning has been made may serve to bring some of them to their senses and cause them to keep their figures within reasonable bounds.

Defining the Amateur.

Like nearly every one else identified with the organization, the new chairman of the A. A. A. racing board is possessed of the idea that automobiling has brought with it new phases of the amateur definition. As a matter of fact, every side it presents is as old as the hills. The man in the trade ever has been the bugaboo of sport. The men fit to govern any sport do not temporize and do not fear to grapple with him. There are sportsmen in the trade as well as out of it; it does not require a spyglass to locate them. The real professionals are equally conspicuous, or cannot long remain concealed.

There really is no occasion for a complex definition of an amateur. The essence is contained in three clauses: (1) He shall not, directly or indirectly, compete for cash or against professionals; (2) he shall not sell or otherwise realize on his prizes, and (3) he shall not follow racing as a means or partial means of livelihood. If it is desired to make the definition even more comprehensive, it might be added that he shall be the owner of the car which he drives.

It is possible to surround the definition with a mass of "ifs" and "ands" and "buts" and other flubdub, but the spirit of amateurism is contained within and is amply protected by the three simple clauses quoted.

Suppose the principal in an automobile company or the manager of a depot does occasionally engage in competition; it certainly does not imply that his motives are sordid. Any man with half an eye can quickly tell whether such competition is to him a partial means of livelihood. There is small chance that will prove the case, and if he does not race for cash or dispose of his prizes he is as good an amateur sportsman as the millionaire who wanted cash prizes "because automobile racing is an expensive game." There should be no trouble in placing in his proper category the tradesman taken from the bench or ostensibly kept at a bench because of his racing capabilities. "Partial means of livelihood" amply covers his case.

If the men in the trade still constitute a bugaboo, then let the rules require of all of them that they execute affidavits that their racing expenses are not borne, directly or indirectly, in the form of salary, commission or otherwise, by the firm or company of which they are a part or by whom they are employed. By making this exaction general it cannot give offence to any. For the man who would be a perjurer rather than a professional there is no hope, and no law, human or divine, will reach him.

But the crux of the whole matter is that where there's a will there's a way. The way to an amateur definition is easy, and the A. A. A. should cease quibbling and come out into the open. Given the hired man, the money chaser and the professional promoter, there will be no sport for the love of sport unless the men who love it take a stand and draw the line deep and distinct and do so quickly.

Are Governors and Pumps Necessary?

Is the governor a necessity on the automobile engine in its present state of development? The question is practically that of the greater effectiveness of hand or automatic control—which of these, all things considered, is best adapted to give the best service in the long run?

Of course the theory of the governor is correct, and if there were nothing more to it than this a governor would be absolutely essential on every car, otherwise would not the engine run away straight to the scrap heap the moment it was freed from the load?

To what extent the theory has been found to prevail probably may best be illustrated by the fact that of fifty representative American and foreign cars only eleven, or slightly over 20 per cent, were so equipped last year,

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and changes in this respect in the present year's models have been more with a view to eliminating all surplusage in the way of needless apparatus—a category to which the governor has apparently been relegated by an overwhelming majority vote. Some well known builders on the other side, who have hitherto considered automatic regulation independent of the chauffeur as indispensable, have concurred in the stripping process, and it is no longer a feature of the power plant of their cars.

The automatically governed engine in many instances presents a striking anomaly, for no sooner has its maker decided to prevent it "racing" by a governor than he goes a step further and provides it with an accelerator; nothing more or less than a device to prevent the governor from slowing the engine down so that in all probability when most needed the safeguard would prove inoperative, a system akin to that prevalent in the navy and other government institutions of putting a man to do a certain piece of work, and placing another either so as to hinder the first man as much as possible or undo the result of his labor.

Of the eleven instances in which the device is employed, eight follow steam engine practice by governing the throttle, the majority of this type utilizing centrifugal force in one manner or another; only two govern the ignition, and one employs a patented system of pneumatic governors controlling the entire power plant automatically. Fifty per cent of the first subdivision is represented by cars of foreign make, so that this narrows the number of American cars employing any governing device down to seven in a total of forty-six, or slightly more than 16 per cent. It would hardly seem from this that the governor can be said to constitute a feature of American practice, nor, on the other hand, that the results of four years' experience have shown it to be a necessity in any sense of the word.

Another adjunct the necessity for which is somewhat in question is the circulation pump, but a resumé of present day practice where this is concerned shows its status to be quite the opposite of that of the governor. The pump is overwhelmingly in the majority, but that, of course, does not prove it to be essential by any means.

This may appear at first sight to be blowing hot and cold with the same breath, and applying the force of the argument indicating that the governor is a superfluity in the reverse direction to prove the same of the pump, but a moment's consideration will reveal that there is a distinction with a difference. Because the governor is only used by the minority shows conclusively that it is not indispensable by any means, otherwise there would be many runaway and wrecked engines; but the fact that the thermosiphon system of circulation is only employed by a pitiful few does not go to prove that it is impracticable, but quite the reverse; that if successful in a few instances, with a little study its greater possibilities might be apparent to the majority.

Of the same fifty cars used in the former comparison but three relied on the automatic circulation of the hot water to effect the cooling, and but one of these was an American car. But it is a significant fact that after three seasons' use this feature is still present on this year's models of the last named. Where foreign cars are concerned, the showing in favor of the natural system is considerably more favorable, as out of the entire number of cars shown at the Paris exhibition in December last some 14 per cent were equipped in this manner. Of those using a pump the preponderance here is for the friction drive; on the other side the direct gear drive is largely in the majority.

It may be argued that makers in this country have tried the thermosiphon system of cooling and were compelled to abandon it, but that only goes to prove one thing, and that is that it was not adapted to their particular cars as they were then constituted. Its failure under such circumstances might be indicative of many other things than its own shortcomings, for the efficiency of any part of a system must always depend upon and be corelative to that of its other components. Probably the most patent fact in connection with its co-called failure here is that the average American car does not carry sufficient water to take advantage of it, or, on the other hand, that the area of the radiator is inadequate for use in this connection. It is hardly to be expected that with its inherent limitation of sluggish movement of the liquid this system could carry off the heat fast enough to keep the engine cool without a generous supply of water, and forced circulation is in consequence a necessity where the latter is limited.

Not that it is without its advantages, for a minimum supply of water means eliminating the water tank, and the pump, moreover, is capable of moving obstructions in the piping that would cripple its weaker rival. The question then rests between the water tank and the pump, and with the alarming increase of weights a hundredweight of water is not desirable. Again the improved pump permits of the natural circulation should it fail to perform its functions.

The whole matter, both where the governor and the pump are concerned, narrows itself to a question of simplicity in the engine, and the type that is least burdened with useless complications in the way of non-essential accessories is bound to be the one that will be a thing of beauty and a joy forever—or at least a much greater fraction of that infinity of time than its encumbered rival.

Moulding the Chauffeur.

The chauffeurs' school has come to be an institution of recognized importance, both here and abroad. The need of skilled operators with a known past has brought it about. And its extension will probably bring about a great change in the status of that worthy, who has hitherto made great gain by trading on the impression that his calling was a gift of the gods, dispensed to only a chosen few, and not to be "picked up" or learned except at the expense of a certain mysterious period of servitude at Canstat or Neuilly.

But, aside from the need of skilled, businesslike operators, there is a growing demand for men of superior calibre, who will enter the lower ranks and not only will merit promotion as the business develops, but will be able to stand advancement without going to pieces or becoming too haughty to dwell with their fellow men, and whose training will stand in good stead when such a time comes. For such men there is plenty of work, and work which pays as well as the elementary work in any other line, and which promises better because it is a gamble with rapid advancement.

"For sale.—Up to date automobile, without motor or tires, but otherwise complete; price, $200. Box 750, Binghamton, N. Y."

This is the naive advertisement which really appeared in an American paper within the last month. It is almost too funny to be a real "ad," paid for in good money. "Otherwise complete" is about as alluring as the usual way in which the ancient junk shop on wheels is advertised—"Good as new; only run a million miles."

This has been an unusually dull week in New Jersey. Not a single automobile speedway has been projected or even suggested.

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FARSON IS STILL FIGHTING

Chicago's Ordinance is "Oppressive and Idiotic" Says Counsel in Renewing the Attack.

Chicago's automobile ordinances were vigorously attacked before Judge Kohlsaat, in the United States District Court, last week, and at the conclusion of two hours' arguments the jurist declared he would take the case under advisement until the filing, within ten days, of a brief showing whether the court had jurisdiction of the question of granting an injunction against the city in favor of John Farson and 134 other complainants.

Attorney Charles F. Davies appeared for the complainants, having taken the place of Attorney Chester B. Masslich. The latter filed the bill for the injunction, but withdrew from the case. The city was represented by Assistant Corporation Counsel Beckwith.

Attorney Davies directed his batteries at the right of City Electrician Ellicott, Commissioner of Health Reynolds and City Engineer Ericson, the automobile board, to sit as an examining body and pass on the health and disposition of a man wishing to qualify as a chauffeur.

"It would be just as sensible to provide that a man shall not have a corn on the little toe of his right foot because he operates three levers with that foot," said Mr. Davies. "The ordinance does not provide that the board of examiners shall have a physician for one of its members, and if it has not how can a city engineer and electrician pass on the physical condition of a man? There is no examination of this kind for drivers of spirited horses which are on the street continually. I insist that this ordinance is unreasonable, oppressive and idiotic."

"I also want the court to understand," concluded the attorney, "that neither myself nor my clients had anything to do with the automobile case decided by former Judge Haney, which was thrown out of the Appellate Court."

Illinois Strikes at "Road Hogs."

By a vote of 36 to 2 the automobile bill drafted and caused to be introduced by the Chicago Automobile Club passed the Senate on Wednesday of last week.

The bill allows a speed of ten miles in congested districts of cities and towns, fifteen miles an hour in sparsely settled districts and twenty miles an hour on the country roads. The penalty for violation is a fine of $15 for the first offence, $25 for the second offence, with a revocation of the license for fifteen days. A fine of $50 and the revocation of the license for six months is the penalty for the third offence.

Another important clause of the bill is that which provides that vehicles moving slowly shall be obliged to give the right of way to those going at a higher rate of speed. This section is meant especially for farmers who refuse to let cars pass them on the road if they can prevent it. Failure to comply with this provision will cost the unobliging person $25.

Saxe Bill Given Finishing Stroke.

While reported unfavorably by the Senate Committee as the result of the strenuous opposition brought to bear against it by allied automobile interests, the obnoxious Saxe amendment had still to run the gauntlet of the Assembly Committee, which is a very large one.

Accordingly, at the request of the legislation committee of the N. A. A. M., Counsellor Terry went to Albany during the past week to make a further argument against it, and it has since been reported that a large majority of the Assembly committee voted against it, which virtually means its demise. As to the numerous other bills pending, Mr. Terry said that none of them is in a sufficiently advanced state to call for any attention at this session.

Asked about the progress of the test cases regarding the constitutionality of the license and registration laws, the laconic answer was, "Nothing for publication."

Col. Green Gives a Gold Cup.

Colonel E. H. R. Green, the Dallas, Texas, enthusiast, does things in a manner commensurate with his size. His Pope-Toledo car having established the 100-mile track record of 2:06:42 3-5, he is anxious to see it broken. To that end he has offered a gold cup as a perpetual challenge trophy, stipulating only that the first race for the trophy shall occur on the Dallas track. Thereafter the challenged party will be privileged to name the course. To each holder of the gold trophy will be given a replica in silver.

For the Protection of Street Railways.

Representative Lahrens has distinguished himself in Nebraska, or at least he probably thinks he has. This all-wise solon has introduced in the House a bill "For an act to prohibit the operation of automobiles and all other vehicles propelled by steam and gasolene power on or along any public street traversed by electric cars."

"Souvenir" of New York's Railway Strike.



HOW THEY GOT TO BUSINESS ON TIME.

CAN ENTER FREE OF DUTY

Uncle Sam Lifts Ban on Foreign Tourists—Also Issues Ruling on Exchanged Cars.

According to new regulations governing the importation of automobiles for touring purposes, promulgated last week by the Treasury Department, the privilege of bringing in cars free of duty is limited to non-residents of the United States. To do this the owner must get a certificate from the United States Consul at the port of exportation to the effect that the car is for touring purposes only, and that the owner is not in any way connected with the automobile trade. The owner may bring the car with him or it may come thirty days before or after his arrivel in the United States. It cannot be used for business or exhibition purposes, but it may be used for racing or other specific contests.

The new regulations prohibiting such entry to cars owned by those connected with the automobile trade will chiefly affect foreign manufacturers who send racing machines over for the Vanderbilt Cup or the Florida events. Heretofore these cars were allowed to be kept three months in bond after there arrival in this country while being raced.

Considerable difficulty was experienced by tourists to this country under the old ruling. The owner of a car had to place with the appraisers' department a sum of cash equal to the value of the machine, or 45 per cent of the car's value as duty. Before the car was released the owner had to file a bond for double the value of the machine with two sureties. Each of the two sureties had to file a bond for double the amount of the bond, plus the duty on the car.

About three years ago the executive committee of the Automobile Club of America made an application to the Canadian government for permission to have free entry into Canada of all automobiles intended for bona fide touring purposes. The Canadian government granted the application and made a very broad rule in regard to the entering of such cars into that country. That ruling in substance has been adopted by the Secretary of the Treasury.

The new ruling also permits the free entry of an exchanged machine which has not been used abroad a year, provided it is proved and included in the declaration that the exchange was necessary because of defects in the first machine, which must be exchanged for one of the same make, power and cost.

Automobiles to be free of duty as household effects must have been used abroad for a year or more by the owner or members of his family residing with him abroad, and these include father, mother, brothers, or sisters. The period of such use may not have been consecutive or immediately preceding the importation.

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Successful Car Building.

WE are this year standing firmly on the fact that we have built a real car, because we have built a car adapted to American conditions, American roads and the American temperament. We know our American market as no French builder can know it.

We have surmounted the problems of car-building this year as we never surmounted them before, although our progress has been steady and on right lines.

We believe the Pierce car to-day expresses the best that can be had in car-building, and we are willing to abide by the result of actual experiment.

Booklet describing the six 1905 cars of the George N. Pierce Company, with special booklets describing the mechanism of each, will be sent on request.

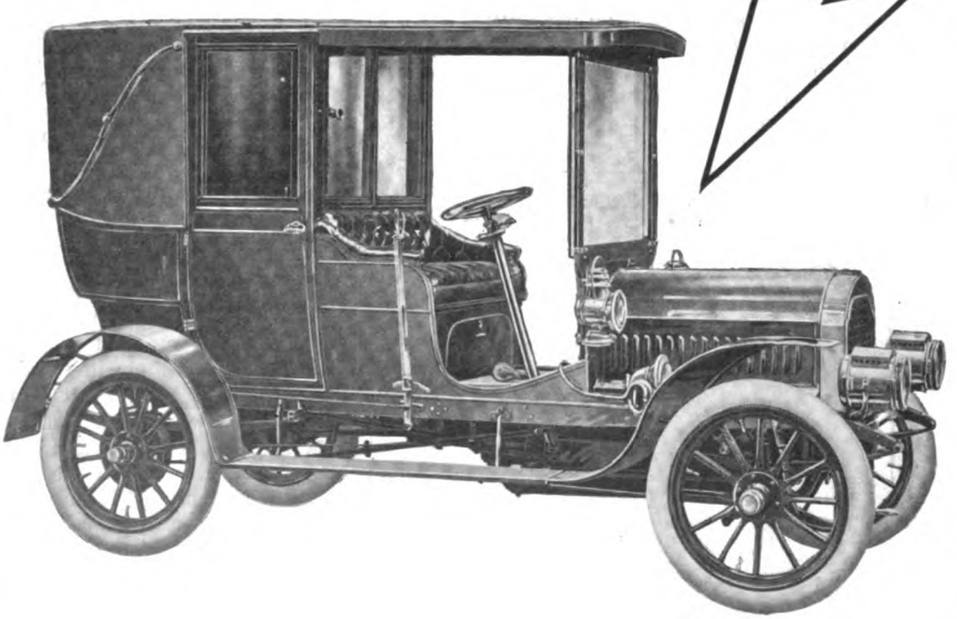
The George N. Pierce Company,

BUFFALO, NEW YORK.

Manufacturers of Pierce Cycles.

Members of the Association of Licensed Automobile Manufacturers.

The 28-32 horse-power Pierce Great Arrow Landaulet body by J. M. Quinby & Company. **PRICE, $5,000.**



FOR SALE BY

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N. L. BIEVER, Derby, Conn.
M. C. BLACKMAN AUTOMOBILE CO., Syracuse, N. Y.
CENTRAL AUTOMOBILE EXCHANGE, Worcester, Mass.
R. V. CONNERAT, Savannah, Ga.
DOWLING & MAGUIRE, Boston, Mass.
EAST COAST AUTOMOBILE CO., Jacksonville, Fla.
ELMIRA ARMS COMPANY, Elmira, N. Y.
HARROLDS MOTOR CAR CO., New York, N. Y.
L. H. JOHNSON, Los Angeles, Cal.
C. P. JOY AUTOMOBILE CO., St. Paul, Minn.
MILLER-MUNDY MOTOR CAR COMPANY, Utica, N. Y.
S. A. MINER, Hartford, Conn.
MOBILE CARRIAGE COMPANY, San Francisco, Cal.
E. P. MORIARTY & CO., Kansas City, Mo.
H. PAULMAN & CO., Chicago, Ill.
J. A. PLACE, Geneva, N. Y.
QUAKER CITY ELECTRIC COMPANY, Philadelphia, Pa.
STANDARD MOTOR CAR CO., Scranton, Pa.
STIRLING AUTOMOBILE CO Detroit, Mich.
THE ELECTRIC VEHICLE & SUPPLY CO., Milwaukee, Wisconsin.
THE GEORGE N. PIERCE CO., Denver, Colo.
THE GEORGE N. PIERCE CO., Oakland, Cal.
THE SHEPARD CO., Providence, R. I.
THE SIMPSON-STRAUSS AUTOMOBILE CO., Louisville, Ky.
A. C. THOMPSON CO., Spokane, Wash.
UNITED STATES AUTOMOBILE CO., Rochester, N. Y.
WATERMAN BROS., Fresno, Cal.
WESTERN AUTOMOBILE CO., St. Louis, Mo.
WILSON & CO., Ottawa, Canada.

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SIFTING THE BILLS

Public Hearing Discloses Unusual Situation in Connecticut and Brings Out Opinions.

Public hearing on the various automobile bills which have been introduced in the Connecticut Legislature this session was held last Friday in the Senate chamber at Hartford.

The hearing attracted a large number of persons, among those who were present being M. Toscan Bennett, representing the National Association of Automobile Manufacturers; Assistant Prosecuting Attorney Harrison B. Freeman, jr., representing the Hartford Automobile Club, and, in his official capacity, Judge James E. Cooper, of New Britain, representing the New Britain Automobile Club; J. Howard Morse, president of the Hartford Automobile Club; Lawyer W. T. Hincks, of Bridgeport; Representative E. A. Smith, of Hartford; Representative Fosdick, and Representative Northrop, of the committee of the Farmers' Association; W. R. C. Corson, Governor Roberts, Highway Commissioner Macdonald, Street Commissioner Angus, ex-Representative Philbrick and a number of individual automobile owners, as well as others interested.

The various measures were taken up in groups; first the petitions for exclusion of automobiles from the country roads; next all registration matters; third, the speed limit bills, and fourth, the light bills.

Of the registration bills, two provide for the retention of old numbers when owners sell one car and get another; a third provides that the law apply to vehicles for hire; a fourth requires manufacturers to have their test cars marked, and a fifth provides for a renewal of registration every year.

Attorney Bennett, representing the National Association of Automobile Manufacturers, and evidently unaware that the association is preparing to attack the laws requiring registration, said the manufacturers are perfectly in accord with the people in the matter and are ready for some sort of registration. It was simply a matter of detail. He agreed to present to the committee a bill that would meet the points. Mr. Bennett said also that the present law enables a locality to require a license from drivers of automobiles than can be hired like public carriages. The impression prevailing now is different.

Assistant Prosecuting Attorney Freeman, of Hartford, showed that there was unanimity for entire registration, and suggested remedies for the testing troubles. The police cannot do anything with the men from two plants in this city as things are, he said. He suggested that placards showing the name of the company be on the cars, and also the initials or name of the drivers. He said the city wants to catch the testers and hasn't been able to for two years. The manufacturers have tried to help, but the men shield each other, and it can't be found who the particular violator is. He wanted initials of drivers to show on the cars, and Attorney Bennett said there could be no objection to that. He could only object to having each man take out a State certificate, for changes in operators are constantly made. Mr. Freeman thought it would be too much red tape to make manufacturers keep records, as livery stables do, of all trips.

The present law provides a speed limit of twelve miles an hour in cities and fifteen miles on country roads, but at no time must the speed be greater than is consistent with safety to life and public property.

Attorney Freeman explained the new bill introduced through Representative E. A. Smith for the Hartford Automobile Club. It provides, he said, that no automobile shall be run at a rate of speed dangerous to life and property, that the speed not exceed fifteen miles in cities and twenty-five in the country. He spoke of prosecutions in Connecticut brought under the present law, and said that after the experience he had had with the law, he, as associate Prosecuting Attorney, concluded he had had enough of it. He went on to tell how one day eight persons had been arrested and convicted for speeding on one avenue here. It turned out that a policeman had been stationed on a certain corner for an hour, and that he had timed all automobiles passing. Nine out of ten violated the law, but by an arbitrary decision only those doing the quarter-mile stretch in less than fifty-five seconds were arrested. He was not for the present law, for we don't want to keep a law that everybody violates.

Since the local raid, he said, the department has refused to prosecute many cases because it appeared the complaints had been made because of spite, even though the persons complained of had actually been violating the law.

Highway Commissioner Macdonald said he had heard and observed a good deal about the use of automobiles on the country roads. If the question of the location of the automobile on the road, as covered by Representative Fosdick's bill, could be taken care of, it would be a good thing. He suggested raising the license fee and turning the money over to his department to keep the roads in order; also having the fines imposed on violators of the road laws turned over to the same department. He advocated limiting the rate of speed at curves on roads, as those were the places where many accidents occur. Representative Fosdick's idea of allowing a good speed on a broad road was good. On other roads he thought the matter would take care of itself. On some highways in the State automobiles, no matter how powerful, couldn't go one mile an hour. Make the speed limit a decent one, he said, and perfect the law year by year as experience shows best. "Give automobilists the same rights and privileges on roads enjoyed by others—no more, no less. Automobiles are here to stay, and in the near future they will be in general use for business as well as pleasure," Mr. Macdonald emphatically concluded.

There were three light bills. One provides that all automobiles must have lights showing from the front, red on one side and white on the other, and vice versa from the rear, only automobiles to have such lights. A second bill provides for lights on all vehicles using the highway from one hour after sundown to one hour before sunrise. The third requires every vehicle on the highway to show from one hour after sunset to one hour before sunrise (but not require between 5 a. m. and 7 p. m. any time) a light or lights visible two hundred feet from front and rear.

After lengthy arguments pro and con on the light question the meeting broke up, having been in session over four hours. The Committee of Public Health and Safety, which has the bills in charge, gave no intimation of which bill it would report favorably, but it is generally thought that the committee will be fair minded enough to advance a measure that will be agreeable to all users of the roads.

Senator Jetton Tries Again.

Senator Jetton, that Tennessee legislator who had what was considered an incurable case of motorphobia, has doubtless been convinced of the error of his ways, as he now comes forward with a measure which indicates some semblance of saneness on the part of its maker.

Jetton's first bill was one which prohibited automobiles from being operated in cities with a population less than 9,000. His next measure was to require each automobilist to deposit a $3,000 bond as indemnity in case of accident. Both bills were thrown out of the committee as worthless. Senator Jetton's latest effort at automobile legislation is a new measure which was introduced in the Senate last week. It provides for the registration of each car with the Secretary of State, on payment of a fee of $2, and an additional fee of $1 must be deposited with the County Clerk of the county in which the automobile owner resides. In case of the sale of a registered car, the new owner is required to pay a fee of but $1 to the Secretary of State and 50 cents to the County Clerk. The bill provides that actions for personal injuries shall be a lien upon the car alleged to have done the damage.

Law now on Montana's Books.

Montana has enacted a State automobile law. It requires that all cars to be registered with the Secretary of State and display the official numbers. It allows a maximum speed limit of twenty miles an hour on country highways, fifteen miles an hour in the residential portion of cities and towns, and ten miles in the business sections. The driver of a car is required to stop the machine when signalled to do so by the driver of a horse, if the animal gives evidence of fright. In case of such a request being made, the chauffeur must assist the owner of the frightened animal in controlling it.

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"Doing" Europe in an American Car.



GEORGE H. DAGGETT AND PARTY, OF MINNEAPOLIS, JUST PREVIOUS TO SAILING FOR ITALY.

These Ferries Remain Obstinate.

Despite the passage of the amendment to the Federal statutes permitting automobiles to be run on and off ferryboats under their own power, the Delaware River ferries, plying between Philadelphia and Camden, are giving it no heed. They are still requiring that cars be pushed on and off, taking refuge, of course, in that section of the law which gives "any owner, master, agent, or other person having charge of passenger steam vehicles" the right "to refuse to transport automobile vehicles, tanks of which contain gasolene, naphtha or other dangerous burning liquids."

Rules that Owner, not Car, is Registered.

City Clerk Hinkle, of Milwaukee, Wis., has decided that it is the owner and not the car which is licensed, and for that reason the sale of a car does not include the number. On the written order of the original owner, however, the license will be transferred to the new owner without charge. If the licensee desires, he can transfer his old license to a new car without changing the record at the city hall.

California Club's Big Growth.

The membership of the Automobile Club of California is increasing by leaps and bounds. On January 17 there were 225 members on the roll, while on the first of March the club had over 350 members. All of the members do not, however, own cars, many of them having joined the club from sympathy with the work it is doing for the betterment of roads. Chances of getting the mountain road from Santa Cruz to San Jose opened to automobiles seem to have brightened greatly. The only serious opponent to the arrangement is one of the supervisors of Santa Clara county. It is probable, however, that the offer of the club to make some repairs on part of the road will bring an amicable arrangement much nearer.

The Record Police "Bag."

Eleven hundred and fifty dollars in fines from eighteen owners of automobiles in one day is the record of an English police trap at a spot on the map of the countryside termed Hayward's Heath. Even in their palmiest days the Long Islanders made a poor showing compared with this.

To Race Baldwin's Airship.

E. M. Clinton, a Los Angeles, Cal., automobilist, has made a wager that he can beat the "Capt." Baldwin's new airship in a race from Los Angeles to Santa Barbara. As the airship flies—if it does—the course is 80 miles, while the road which the automobile must run over is 100 miles long. The race will probably take place next month.

Chicago's Racemeet in May.

The Chicago Automobile Club contemplates having three days of racing in the spring, and has accordingly asked for the sanction of the American Automobile Association. The dates of the projected meet have been set for May 27, 29 and 30.

Rockford has a Racing Club.

Automobilists in Rockford, Ill., have formed the Rockford Automobile Racing Club. The following officers were elected: President, N. F. Thompson; secretary, O. W. Johnson; treasurer, Lee Burr. The club has a meet in the "works" for July 4.

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ABOUT ENGINEERS GENERALLY

How Some of Them View Themselves and How Automobile Work Compares with their Views.

Whether or not the building and operating of automobiles may be considered in any way as a branch of the engineering profession is somewhat of a question. Engineers, as a rule, love to deal with big problems, problems involving vast outlay of capital, the results of which stand silhouetted against the background of time as great achievements. The technical training which they receive rather tends to induce in them an attitude of scorn toward any but great undertakings. If a well established engineer turns his efforts to the production of a light class of work, as, for instance, the development of labor saving devices or automatic vending machinery, he is looked upon by his brethren as having forsaken the field which tradition has marked out as legitimate engineering.

Yet in baffling intricacy and persistently recurring difficulties this work is a far greater tax upon patience, ingenuity and skill than is the pure engineering whose great dependance is upon precedent.

To say that engineering is not original or that it depends solely on precedent is palpably erroneous; yet no one can deny that the great achievements of the day, the tunnels and bridges and huge buildings that make all the world stand aghast, are but the extended application of principles known and used for years, and hundreds of years, which have been modified to meet the demands of purely local conditions. Steam and electrical engineers are working on newer lines than are either the architectural or civil engineers, but both have now a more or less complete record of past performance for their guidance.

Time was, and that well within the memory of man, in the case of electricity, however, when those who wrought and sweat and struggled to produce the perfect lamp and the perfect motor were looked upon as triflers. To-day some of those very men are known not simply as engineers, but as scientists and benefactors to the world.

To say that the automobile is destined to be crowned with such a measure of success, will become of so great utility to the world and its production of such importance; that the "automobile engineer" will some day take his place by the side of and as of equal rank with him who designs the huge locomotive or the electric streetcar with its sound as of the grinding of coffee; that the captains of the industry and the sly promotors will hobnob with railroad magnates, and "automobiles" be classed with other transportation securities, is perhaps to yield to an idle, rosey dream. And yet the Spaniards say "Quien sabe?" and light another cigarette. And the fact remains, no matter what the future may bring forth, that just now the living present holds for the designer of the motor car, whether it be of hydro-carbon, steam or electric propulsion, whether it be for business or pleasure in its intent, certain problems which are as difficult to solve as any which fix the attention of the executive of a great contracting company. There are bothersome little questions which must be decided on no more substantial basis than the experience of one or two mechanics who insist that such and such a device will not work, when theoretically it cannot fail to do all that is required of it. There are mechanisms to be designed which are without precedent in their use. There are stresses to be calculated on an unknown basis, and loads and strains to be worked out on the vaguest kind of empyrical data. And in a field which is free for all, where the play is fast and furious and the only tribute demanded of a newcomer is in the form of tangible results, is there not an opening for the trained engineer?

Perhaps the decline of the bicycle industry, which at one time held out very great inducements to the engineer, serves as a check on some who would otherwise join forces with the newer line. They fear a similar ebb tide later. But this fact is as fixed and true as the laws of the Medes and Persians. The bicycle industry in a few short years took what had been a crude child's toy and presented to the world the most beautifully complete mechanism it has ever seen and one which, in lightness, simplicity and smoothness of running rivals anything made before or since. Granted even that the automobile business in its greatest magnitude is to be merely ephemeral—which no one really believes for a minute—it has taken up the matter of shop production, of the interchangeable feature in manufacture and of rapid, accurate machine tool work, just where the other has let it drop, and is carrying it a step further. It is carrying on the experimental education of the industrial world, and if it gets no further will not have existed for naught.

There are a few engineers who have turned their attention to the work with successful results; others are constantly being attracted to it and are joining the ranks one by one. But in all its branches is felt the need of the trained technical man, who will take hold of the work on a scientific basis, who will gather accurate statistics and present them in practical form, and who will overcome the tendency to grasp a dollar to-day regardless of its effects on to-morrow's income, and work for the sake of the work—because of his professional pride. Such men are needed, and until they come from the schools with their crude boyish self-conceit, and turn from other lines with a few years of the leaven of experience to balance the early dreams, the industry will continue to feel their need.

The Fourth Chamber of the Tribunal de la Seine, at Paris, has decided that skidding is no excuse for an accident. In a case in which the tires of an automobile skidded and caused an accident the owner of the car was held to be responsible.

SPARK PLUG IMPROVEMENT

Efforts Making in that Direction and Some of the Recent Creations that have Resulted.

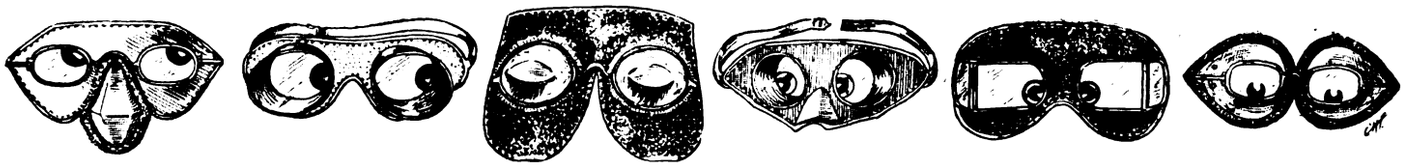
Considerable attention is being paid to the matter of improvement in the spark plug, to judge from the crop of so-called improved plugs heralded all at once by the automobile press on the other side. But, on the whole, as mentioned in the Motor World recently, this highly important essential has not undergone any radical change during the whole course of its existence, and none is noticeable in the alterations under review.

The Germans must be credited with being pioneers in the successful production of a mica insulated plug worthy of the name by adopting the transversely placed layers put together under high pressure. It has been found, however, that even mica fades away before the fierce heat to which the end of the plug is subjected, and at least one such plug has recently been improved by the substitution of a porcelain tip. As this does not receive the full force of shocks of vibrations, it is not open to the objection of frequent breakage which has given the all porcelain plug an unenviable reputation.

The petticoat insulator, universally used for telegraphic and power transmission purposes, is such a common sight that it appears strange that no one has taken advantage of it for the porcelain head of a plug before now. Its function is, of course, similar to that of an umbrella; it prevents moisture from dripping on the pin or support of the insulator and, in the case of a plug, on the core. This is a feature of the Dinin, an English plug, but its advantage is lost if the plug be placed other than vertically. Another feature of the same plug is a mushroom head instead of a sparking point, as ordinarily employed, and in this respect advantage is take of one of the elementary laws of static electricty—that a ball of fire jumps from a ball and only a thin, jagged stream from a point, this being exemplified in the Leyden jar, which is invariably constructed with brass ball terminals, varying in size according to its capacity. The polished surface of this mushroom terminal discourages carbon deposit, and is said to be an effective preventive of sooting. It is supplemented by an arched ground wire, extending completely across it and made fast at each end in the body of the plug.

"Osbolor" is the rather "hifalutin" title of another English plug that has no connection with its construction, as its only claim to distinction is the somewhat doubtful improvement of an extension of the sparking terminals; otherwise it is just the common garden variety of article. The platinum wires are extended an inch or less beyond the end of an ordinary plug, the idea being to produce the spark more toward the cen-

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"GOGGLE EYES"

tre of the charge and in consequence to obtain more efficient combustion.

These are some of the important claims made for it: "The gas can be fired in the middle of the combustion space, thus giving a quicker and stronger explosion, the propagation of the latter taking less time than if fired at the top or side of the combustion space. Live gas is ignited instead of the spark occurring in the strata of contaminated gas remaining at the top or directly over the exhaust valve of the cylinder. Any oil vapor which tends to foul the ordinary type of plug collects about the long stem and is led away from the porcelain. The porcelain may readily be cleansed all around owing to the distance at which the points are placed from it."

It is safe to say, however, that this new type of plug has not been accorded any very exhaustive trials in practice, as it would readily develop serious defects, principal among which would most likely be the bending of the points from the concussion of the explosion, followed by dissolution through overheating, unless made of a size that would render the employment of platinum prohibitive owing to its cost.

The magnetic, self-contained, automatic, sparking idea in plugs seems to have just struck England, as the "Firefly" is apparently the first of this class to be put forward there. Probably more than half a dozen of this type has made its appearance in this country within the last three years, but hardly more than one has survived the test of time, and the one remaining in the field bids fair to disappear before long. Theoretically considered, the magnetic plug should solve half the ignition troubles to which an engine is subject, but it falls a long way short of it, and is only another of the very large number of instances of where theory and practice are so far apart that they cannot be reconciled. Doubtless the greatest drawback to its use on the automobile or marine engine is the limitation of the battery because of the plug's excessive current consumption—the magnet winding requiring more than the sparking and the demand upon the cells through this cause not only being more than double the ordinary, but practically constant, as the attraction of the armature and the occurrence of the spark take place in sequence and not simultaneously. Even the most efficient form and method of winding the magnet has not been found sufficient to overcome this, and probably it is the chief reason for its failure to find favor here.

If under such conditions no success has rewarded the efforts of the various inventors who have tried to solve the problem in this manner, how much less so must be the case in the instance under consideration, where the design is that of a solenoid using an attenuated plunger. It would be difficult to create a means of bringing movement about magnetically that is more wasteful of current than this, and where the source of energy is confined to a battery this is an element of prime importance. Numerous other defects have developed in the use of this type of plug here which have been found to render its use of extremely questionable benefit.

The "A. D." plug, used on Panhard cars, has been altered somewhat, but the difference is so slight that the average purchaser would scarcely note it. A change in the porcelain and a slight elongation of the return point, which now extends about one-quarter of its length beyond and alongside of the central sparking point, constitute the improvement which is claimed to make for a cleaner and, on the whole, more serviceable article.

Seeking to Employ Magnetism.

Faith lost in the magnetic clutch has apparently not been sufficient to prove the undoing of this force entirely where the automobile is concerned; it has merely been transferred, for now an attempt is making to prove its adaptability in a slightly different manner, and at the same time to demonstrate that it is superior to existing methods.

This is exemplified in a car recently produced by Le Societe La Magnetique, of Paris. With the aid of this mysterious force the inventors rely upon eliminating both the clutch and the transmission—truly a consummation devoutly to be wished. To accomplish this a large electro-magnet in the shape of a plate of steel is employed, placed a short distance away from a corresponding steel plate designed to act as an armature. The first plate is recessed to take the winding, and when this is energized by a current from an accumulator or generator provided for the purpose it is calculated that there will be sufficient adherence between the magnet and its armature to prevent any loss of power, and, in short, to provide a direct through drive without the intermediary of a clutch.

The magnet is placed on the end of the engine shaft, and its armature forms the forward end of the first speed shaft—that is, this is one unit of the system, for there is one for each separate speed. The pinions are always in gear, but are free to revolve around the first speed shaft, except when the two plates corresponding to this speed adhere through their actuating magnet being energized, and so on in turn with any speed required—each is practically independent of all the others. With this system the change speed levers are no longer a feature of the car, and it is possible to shift from the third, or high, speed directly to the reverse at a moment's notice, and the operation is not accompanied by any shock or noise, the reverse motion in this case acting as a brake until the car has come to a standstill and started in the opposite direction. It is adapted to be employed either with the cardan shaft or with chains.

Experiments with magnets in large metal working plants in this country, particularly for picking up sheets or other large pieces of steel or iron, have shown the tremendous adhesive power of which a properly designed and energized magnet is capable—so much so that it is safe to say that, all other things working to the maximum efficiency, the engine shaft and the speed shaft should become practically one piece when running. But adhesion which merely means lifting power and adhesion which must resist torsion strains amounting to the whole net output of the engine are widely different things, and whether the same amount of current which is sufficient to energize the magnet in the first instance will do so in the latter is something not to be demonstrated by mathematics.

It is also questionable if the magnetic force while sufficient to maintain adhesion would at the same time suffice to prevent the plates turning, even though they remain intact. As for the amount of power required to develop the requisite current to energize the magnets, this should certainly not exceed that now absorbed by the sliding gear transmission and the clutch, while an ample supply of electric current is never out of place on a car. So far as this goes, the system has everything in its favor, and in its simplicity and ease of manipulation and control holds forth alluring possibilities. Whether they can be materialized or not is another story.

More Horses to be Released.

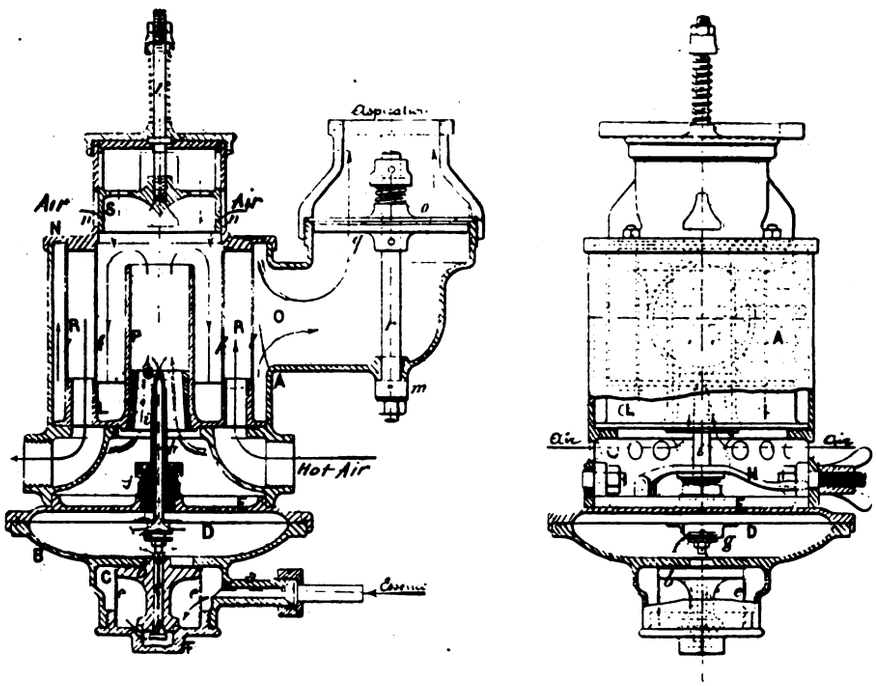
After making a number of experiments and finding that by using automobiles to deliver baggage it will take just one-quarter the time that it took with horses and trucks, the Detroit (Mich.) Omnibus Co. has decided to abandon the old style of delivering baggage and use automobiles exclusively hereafter. The change will be made as soon as the new cars can be built.

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ELIMINATES THE FLOAT

French Carburetter that Departs from the Beaten Path—Its Design and Operation.

Since the float feed principle first proved so well adapted to the needs of the automobile carburetter, its use has become almost universal, and despite the endless stream of patents constantly issuing for improvements on this essential adjunct, very few inventors have devised any other basis as a starting point. A French firm—Theveniu-Sequin, of Lyons—is now, however, marketing a carburetter, which differs radically from any of its predecessors. Primarily, it does away with the float system of regulation, and in its place substitutes the weight of a column of liquid—in other words, hydrostatic pressure.



It is composed of the usual brass cylinder, in this instance slightly longer than ordinary, fitted with annular chambers, a basin for the reception of the gasolene and the necessary outlets for the mixture. A circular metallic diaphragm of 1 mm in thickness, acting under the hydrostatic pressure produced by the column of fuel, performs the office of a regulator and serves to keep the level of the liquid constant. The cylindrical body carries at its lower end the flattened holder B, which is prolonged toward the bottom to accommodate the receptacle C, into which the feed pipe enters.

Across this receptacle C is centrally disposed the part b, pierced at the base by small conduits and centrally by an opening through which passage a fluted trunk extends, terminating at its lower end in a clack valve, d, the seat of which is formed by the lower part of the piece, b. In addition, the trunk, c, carries at its upper extremity a nut, forming an opening between the two collars, ff, the position of which is adjustable. This upper end of c engages a small hole or hollow of the arch in the stirrup-shaped piece, g, which in turn is soldered to the under surface of the diaphragm, D. All these pieces may be readily dismounted without any difficulty.

Around the piece, b, is disposed a cylindrical filter or sieve, e, the purpose of which is to collect any dirt in the fuel. This may be instantly discharged by unscrewing the tap, E. The light brass diaphragm, D, of but 1 m.m. thickness, is pinched around its entire periphery between the edge of the lower part of the reservoir, B, and the edge of the cover, E. In its centre and on the upper side is soldered a tube or adjustment, G. This tube is so placed as to slide freely on another tube, i, screwed to the upper part of the cover, E. The latter is pierced by a hole, through which the small rod, j, may pass and project outward over the side of the tube, i, and on which is supported by a circular enlargement the lever, H, movable by hand from the exterior of the carburetter. The latter is designed to facilitate the priming of the carburetter by lightly shaking the diaphragm, D, in such a manner that it causes the fuel to mount the tube, c, to a convenient height.

The principle on which this system of automatic feed by means of the diaphragm is based is as follows:

Starting with B full of liquid, which raises the adjustment of C to a certain height, the resulting pressure of the column of liquid above the level of the diaphragm is also exerted beneath it, thus holding it in equilibrium and in consequence subject to atmospheric pressure, which is free to act on the upper side of D. After an aspiration of the motor, the column of liquid recedes, this equilibrium is disturbed, and the thin membrane is arched downward under the force of the atmospheric pressure.

Through this movement the rod, c, and with it in turn the clack valve, d, is actuated, so that the liquid under pressure refills B to a point where the column is replenished sufficiently to regain the equilibrium of the diaphragm, and the movement of the latter then shuts off the supply. This arrangement possesses the advantage of not only being extremely sensitive, but also of performing its functions through the medium of a minimum of the lightest possible moving parts, and which do not require a relatively long range of travel in order to effectually shut the clack, d. Moreover, the parts are free from the vibration to which the float of that type is subject, nor are they influenced by the position of the carburetter itself, no matter at what an angle the latter may be placed. It also follows that this principle of regulation—that is, by means of a diaphragm—is adaptable to any carburetter of the constant level order. In order to do this, it is only necessary to join B to the carburetter, of which the usual float feed reservoir is omitted. To this end B must have an outlet provided with a joint.

The body, A, of the carburetter includes an air-intake chamber pierced with a series of holes about its entire periphery, which will be noticed in the sectional view. This air enters the annular chamber and becomes carburetted upon contact with the spray of gasolene issuing from the small orifice, c, while a diffusing tube, P, aids in preparing the mixture. About this diffuser three concentric chambers are disposed.

Two concentric walls, k and l, with the cover, N, combine to form the first annular interior chamber, while the space between P and the partition k comprises the median or second chamber, R R, lying between the walls k and I. The third chamber is formed by the partition k and the inner side of the body of the carburetter A, this last chamber communicating directly with the aspiration outlet, O.

Through the piece, L, two vertical conduits, m, are pierced, thus placing the warm air inlet in direct communication with the median annular chamber. On another part the piece, L, is pierced by a series of radiating conduits, represented on the plan, and serving to place the exterior and interior annular chambers in communication with one another. Through one of these conduits, on the right, for example, enters the gas escaping from the median annular chamber and, traversing it, passes out again on the left.

The carburetted mixture formed by the diffuser, P, descends the interior annular chamber, striking the walls of the median chamber, k, by which it is warmed, passes through the horizontal openings to the outer or third chamber, and here, reascending, is further warmed by contact with the exterior wall of the median chamber, and from here passes to the intake of the motor. On the in-

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terior of this intake tube is placed a butterfly valve, which permits the quantity of mixture admitted to the motor to be regulated to a nicety.

This valve is composed of a fixed plate, o, pierced with two slits or long openings. This plate is held between the edge of the tube, O, and the portion of the intake tube entering and narrowing toward the top, fitting the tube, O, snugly, on which it is screwed. A movable plate, q, situated directly beneath the fixed plate, o, and mounted on an axle, r, is likewise provided with long apertures, of which the sides have an angular profile, in such a manner that these sides cut the corresponding sides of the openings, p, in the fixed plate, so that even the slightest change in the angle of the mobile plate, q, alters the quantity of mixture and provides an extremely accurate and sensitive means of regulating the amount admitted.

A small spring fastened at one end to the fixed plate, o, and at the other to an extension from the centre of the axle, r, serves to maintain the movable plate, q, against the fixed plate, the adjustment of the former being accomplished through the light lever, m, fixed to the axle, r.

It is also provided with an auxiliary air supply. On the body of the carburetter, A, the lid, N, is surmounted by a cylinder, and the latter is pierced with small openings adapted to be tightly closed. On the interior of this cylinder there is a piston, S, closed at the bottom and also provided with openings, which correspond more or less with those in the wall of the cylinder as the piston drops. The latter is provided with a rod, t, passing through the cover, by means of which it is constantly lifted to the upper part of its cylinder by a small spring.

This spring is very weak and is not set to absolutely counterbalance the weight of the piston, T, the function of which is regulated by its pneumatic character as follows. In proportion to the increase in the depression in the body of the carburetter, the piston, S, lowers owing to the vacuum between the cover and bottom, so that the force exerted upon it tending to replace it in position is equal to the difference in the pressure exerted above and below the piston. But owing to the weak spring, the air re-enters sufficiently slowly so that a perfect vacuum is not produced and the resistance met by the piston, S, in descending diminishes in proportion to its travel, and at the same time the exhaustion beneath it is augmented.

While apparently very complex, this series of operations can better be followed by reference to the sketches showing an elevation and cross section, from which it will be seen that it is much more simple than the description of its working would imply. It is claimed to be much more sensitive and reliable than the float feed type.

Freas C. Hayman, a mail carrier in Santa Barbara, Cal., is trying an automobile as an experiment in mail delivery in that city. Hayman will endeavor to determine the cost of automobile delivery as compared with horse and wagon.

Two Thousand Miles Through Mud and Snow.



Philadelphia had something to look at and talk about last week—a big Thomas Flyer, incrusted an inch deep with the clay and mud of four States so that its original color could not even be guessed. It stood in front of the garage of the Martin & Hart Motor Co., 215 North Broad street, and looked more like a mud scow than anything else. It had just returned from a run of 2,000 miles over the teritory between Philadelphia and Richmond, Va., embracing the roughest roads in the country. Despite its looks, it was in perfect condition and ready for another racking test.

Other tests to which E. L. Hawkins, of the woolen firm of E. R. Hawkins & Co., had submitted the machine convinced him that it could make a trip, hitherto never attempted, over the back roads of the South in winter time. He started a fortnight ago. His business called him away from the beaten path of travel and carried him via Wilmington, Washington and Richmond, but much of the entire trip was made over roads on which the tire of a motor car had never made its mark.

In describing the trip, Mr. Hawkins declared that he does not see how he ever made it. When he passed from the main road for the first time and pushed up a narrow mud trail south of Baltimore he was tempted to turn back. Hardly a mile was traversed before the wheels were sinking deep into the mud. But the Thomas, to the driver's surprise, pushed along serenely. It was only a suggestion of what was to come. The further south the machine went the worse became the roads.

Before Mr. Hawkins reached Richmond the car had ploughed mile after mile with the wheels sunk to the hub in mud and clay. Crossing on the ice over a creek near Richmond, the car broke through, but it forged through the water to the bank, and six horses dragged it uninjured to the level ground. During the entire trip, Mr. Hawkins says, he was not obliged to stop once for repairs.

How Duerr Celebrated the Day.

C. A. Duerr, New York agent for the Royal Motor Car Co., of Cleveland, was about the happiest of the thousands of happy people in New York on St. Patrick's Day, for, like a good Irishman, he celebrated the day right royally by selling two Royal Tourists, one a limousine, to Major C. J. S. Miller, who has attained some prominence in the racing field and who is an enthusiastic and experienced motorist. Major Miller has owned several cars, and that his latest choice should fall to the Royal Tourist is naturally a cause for elation to Mr. Duerr.

Arrested for "Automobile Lottery."

Charles W. Smith, of Bloomfield, N. J., was arrested in Newark last Friday night on the charge of having used the mails to exploit an automobile lottery. The complaint against Smith was sworn out by Anthony Comstock before United States Commissioner Bigelow, on the ground that Smith induced him to participate in the lottery to be "fleeced."

As a Doctor's Car.

The Michigan Automobile Co., Ltd., have established a branch in Kansas City, Mo., under the management of H. D. Clark, Jr. They are located at No. 1319 and No. 1321 East Fifteenth street. This is the store occupied last season by the agent for the Cadillac.

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ECONOMY IN RECHARGING

Low First Cost and High Efficiency of Mercury Arc Explained by A. C. A. Lecturer.

Mercury arc rectification of the alternating current for accumulator recharging was the subject of the lecture delivered before the Automobile Club of America on Wednesday evening by Alexander Churchward, who explained the workings and advantages of the apparatus by a demonstration of a standard 30 ampere rectifier in connection with a set of lead cells and an Edison battery.

There are several methods for recharging available to the owner of an electric vehicle who wishes to be independent of the charging station, such as a small gasolene-driven generator, a single phase rotary transformer, a motor-generator set or chemical rectification, but all are open to the objection of requiring constant supervision. Alternating current presents so many advantages for power and lighting purposes, and particularly for long distance transmission, that its use in smaller towns and cities is now almost universal, and recourse must be had to some method of transformation to direct current. But even where the usual 110-volt direct current lighting circuit is available the use of the mercury arc rectifier is an economy in that no external resistance is necessary to cut down the pressure to that required by the battery.

The fact that alternating current is not available for recharging accumulators is probably too well known to call for comment, but the reason therefor is not a matter of such common knowledge, even on the part of many otherwise well informed. Alternating current, as its title implies, alternates in direction, first one way, then the other, the periods or cycles varying in number from 25 to 133 per second. The current supply for storage must flow continuously in one direction from the positive to the negative, thus liberating oxygen and hydrogen, which gases, in turn, combine with the chemical filling of the plates, and in some cases with the electrolyte or acid solution employed. By this means new chemical compounds are created, which in this instance means the storage of energy. These are reconverted to their original constituents by the discharge, so that it will be evident that unless the current flows in one direction, no chemical reaction occurs, and consequently no energy is stored.

The advantages and disadvantages of these various systems as compared with the mercury arc rectifier are as follows: The small direct current generator set run by a gasolene engine is, of course, practical and economical, but requires constant supervision. The next best thing is the motor-genator set —an induction motor on the alternating side direct connected or belted to a small direct current generator. Both this and the engine driven set call for a comparatively large first cost, and in the latter the efficiency at full load is not as high, while on a light load it is very wasteful. Both, likewise, require considerable floor space.

The single phase rotary transformer combines in one frame the alternating current motor and the dynamo of the generating set. It is, however, not so flexible, as the motor side has to run synchronously with the supply circuit, an objection to which the motor-generator set is not open, owing to the use of the induction motor. It, however, calls for a smaller investment in the first instance, and has a much higher efficiency, even at light load. But skilled supervision is necessary in starting, this being done by turning it over as a motor from the direct current side until its revolutions become synchronous with that of the supply—in other words, until it gets "in step" when the alternating current is thrown on. Once running, it does not require any more attention than the motor generator set.

There is still another method, and that is the synchronous or mechanically driven rectifier, and while largely used abroad, it has not become popular here. It consists of a small alternating current motor of the synchronous type, driving a specially constructed commutator to which the alternating current is fed, and from which the direct current is collected. This type of machine is comparatively small, but requires considerable attention, as the brushes collecting the converted or direct current spark badly, and require constant renewals, adjustment and attention. Its efficiency at all loads is, however, high,as compared with the motor-generator set.

The chemical rectifier generally used is either of the Noden cell or a modification of it. Its operation is based on the principle that aluminum and lead, or iron or carbon plates, placed in certain solutions, only permit the flow of current in one direction. The gases generated combine chemically with the solution, and the aluminum plate and a valvular action ensues which allows the current to flow only in one direction. Its advantages are low first cost as compared with any of the above mentioned methods, and small amount of floor space required, but, on the other hand, its action is not uniform or reliable and its efficiency is low under all conditons.

From this it will be seen that the mercury arc rectifier presents the advantages of lower first cost, simplicity and higher efficiency than any of the systems enumerated when used for the purpose for which it is specially designed; that is, recharging in the private garage. Its action is based on a principle analagous to that of the chemical rectifier, that mercury vapor will permit a current to flow in one direction only. The apparatus consists of four important parts, namely, the panel, tube, holder and compensating reactance. On the panel are mounted the necessary instruments for indicating the voltage and amount of current used on the direct current side, as well as the tube holder and all necessary switches, fuses and the like. A lamp is also provided to indicate that the starting resistance is in circuit, so that the latter may not inadvertently be left on after the arc is in operation.

The tube in which the transformation takes place is an exhausted glass vessel containing two anodes connected to the alternating side of the circuit. These are located at each side, a few inches above the bottom of the tube, and a cathode forming the positive of the direct current side at the bottom of the tube on which the mercury rests. There is, further, a small starting anode, the function of which is to form an arc to start the rectifier. This is done by shaking the tube slightly from the top, and this auxiliary anode only remains in operation long enough to start the arc.

The compensating reactance is a most essential part of the apparatus. It is connected directly across the alternating current supply mains and furnishes from this neutral point the negative side of the direct current circuit. Taps are brought out from the reactance to a dial switch mounted on the front of the panel. By means of this switch the amount of current and the voltage may be varied within the limits of the capacity of the rectifier without the use of an external resistance which would tend to reduce the efficiency.

The tube is made of extremely thin glass in order to render the co-efficient of expansion of the latter as nearly as possible equal to that of the platinum contacts, and it is exhausted until the most perfect vacuum obtainable is produced. Owing to the amount of mercury necessary, the tube must be handled with extreme care. At this point the lecturer was interrupted by interrogatories as to the life of the tube and as to how it was possible to transport such a fragile article, owing to the fact that suddenly tilting it would suffice to cause the mercury to crash through the end of it. As to the first, the average life is about 400 hours, although one now in use has lasted 1,500 hours, and they have been known to give continuous service for 2,700 hours. The causes of dissolution are principally careless handling; that is, not of the tube itself, but of the current, such as throwing on the full load suddenly when the tube is very cold. The heat generated in the tube must exceed 360 F., as mercury boils at this point, and it must do so to vaporize. Then, again, after continued service the mercury begins to form an amalgam with the platinum of the contacts, and thus bridges across the tube, preventing the formation of an arc. Or, if overloaded, the glass at the anodes becomes softened through the intense heat, and as owing to the vacuum there is an external pressure of practically fifteen pounds to the square inch, it is forced in and destroys the vacuum.

As to transporting the tubes, while the usual precautions in packing are taken, the admonition, "this side up," is further enforced by placing a glass bulb with colored water in it protruding through the top of

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the box, and the expressman, fearing acid, keeps it right side up and handles it gingerly.

The function of the compensating reactance, which is a winding on a heavy iron core similar to a transformer, is to allow one part of the wave to flow through the tap and prevent the other or alternating wave. A representation of the latter on paper is indicated by a zigzag line, varying in height according to the current, the tops or upper ends of which are termed the peak of the wave and the lower end zero. The transformation process means the elimination of this zero portion or drop in the wave by causing it to overlap the next alternation slightly. The reactance does this, but unless properly built, it will not give satisfactory service.

As it is converted into vapor, the mercury rises into the bulb-shaped enlargement of the upper end of the tube, where it is condensed by the comparative drop in temperature and then flows down the sides of the tube in the shape of metallic mercury.

The standard rectifier has a capacity of 30 amperes at 220 volts, but experiments are now making to build outfits of double this capacity, though as yet they are not ready for the market. It is, however, adapted for use on alternating current at a pressure of 110, 220 or 330, and the direct current can be varied from 16 to 115 volts. When connected to a 220-volt supply the range of voltage on the direct current side will be from 45 to 110 volts. Where a small number of cells are used, the pressure required is between 16 and 45 volts, and to obtain this the 110-volt alternating current has been found most satisfactory.

Where reliability is concerned, one of the chief advantages of the system is the possibility of using it for all night charging and of the absence of necessity for supervision, as any unusual drop in the current causes the arc to rupture and back pressure from the battery would do likewise. If an attempt were made to start below the voltage of the battery, the arc wold not form, so that no combination of circumstances could damage the battery. If subject to frequent and violent fluctuations in the supply that would cause the arc to rupture, an automatic restarter in the shape of a magnet and armature to shake the tube is provided.

The efficiency of the rectifier as laid out for charging storage batteries is very high at all working loads. For instance, a 30 ampere rectifier suitable for charging a 44 cell 11 M. V. lead battery would have an efficiency at full load—namely, 30 amperes, 110 volts—of approximately 80 per cent., while a motor generator set of the same capacity and under the same load conditions would have an efficiency of not higher than 62 per cent. If the charge should be of long duration, such as all-night charging, the current would have to be reduced. For instance, for an all-night charge of ten hours, to charge a 44-cell, 11 M. V. battery, the average current should be 16⅔ amperes at an average voltage of 106 volts. The efficiency of the rectifier under these conditions would be approximately 80 per cent., while the efficiency of the motor generator set for this light load, namely, 16⅔ amperes at an average voltage of 106, would only be 51 per cent. The efficiency of the chemical rectifier for charging the above battery could not be higher than 50 per cent. at full load conditions.

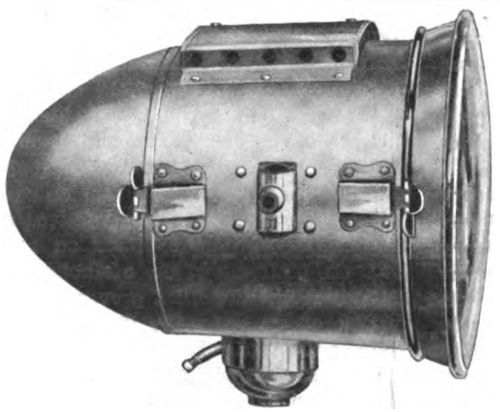
Winthrop E. Scarritt supplemented the lecturer by stating that in his personal experience with the mercury arc rectifier, he had found that this new "baby of science" was the greatest source of comfort to the owner of an electric vehicle. "To be able to hook her up to the current in the barn before going to bed and get up in the morning knowing that the battery would be fully charged was indeed a convenience," he added.

One Club's Weekly "Show."

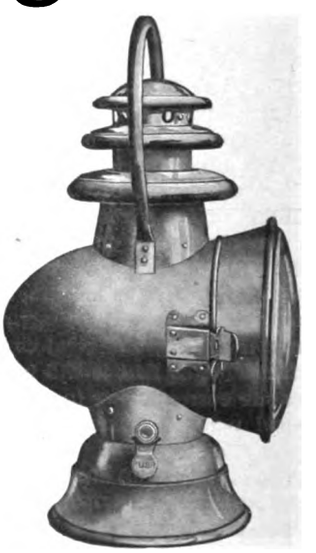
The exhibit at the weekly show of the Long Island Automobile Club, in Brooklyn, next Friday night will comprise the well-known Pope cars. The Long Island Club inaugurated the novel method of displaying and having the principles of one or two cars explained each week. The first exhibit took place soon after the New York show, and since then different cars have been shown each week.

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CONCERNING SPRINGS

Stresses to Which They are Subject Not Generally Appreciated—Some Effects Illustrated.

Now that a goodly amount of success has attended efforts in the production of a reliable motor and its attendants, the carburetter and igniter, tire troubles stand out more prominently than ever as the greatest bete noir of the automobilist. While there is

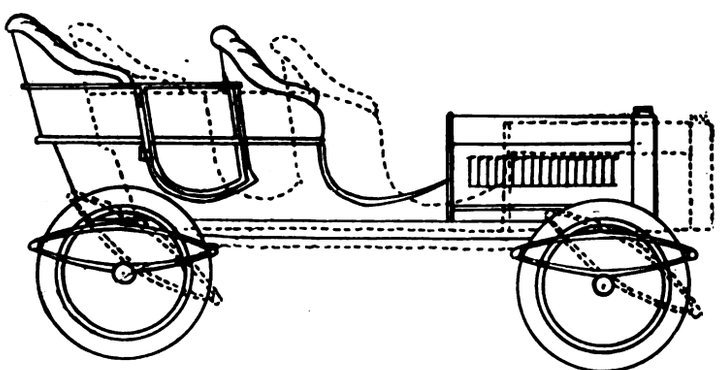


Fig. 1. Tendency of longitudinal strain.

small chance that the air tire ever will be displaced to any appreciable extent, the results of last year's Reliability Trials, in England, have been taken as an instance by an English engineer of the lack of reliability of the "footwear" of the car and an argument in favor of the adoption of the solid tire with better springs to compensate for the shortcomings of the latter.

In the trials in question, low-priced cars suffered from tire trouble in 63 instances, and the time spent in the garage from the same cause was 743 minutes for repairs and 123 minutes in pumping. Taking time, the number of accidents and the total mileage, this imports a puncture for every 300 miles, and some minutes' tinkering with the tire in some way or other for every 24 miles driven. In the more expensive cars results were very much more favorable—a total of 26 instances of trouble, or an average of one in 1,340 miles—in the garage, 15, or one in 2,400, with 145 miles traveled for each minute spent on tires in garage.

But this refers to the high-priced cars within the reach of comparatively few and cannot be taken as a basis. The above figures for the lighter cars mean that for every trip of 50 miles the chances are 6 to 1 against covering the distance without delay from this cause. Three thousand miles is said to be the average life of a set of tires in England, and probably it will hold good here as well, and taking their cost as $150 there, it is figured that tire maintenance means 24d., or practically 5 cents a mile—a pretty stiff figure sans the ever present chance of trouble.

Solid tires of generous proportions immediately suggest themselves as a remedy, but it is evident that the car must be built for them, for to apply them to one designed for pneumatic tires is to court certain failure. Even the latter did not prevent smashed springs in several instances in last year's Vanderbilt Cup race. The car of to-day has been perfected on the assumption that nearly half of the spring play will be in the tire, say, 3 inches; this, with the 3 or 4 inches provided by the usual single springs, is ordinarily ample.

But take away the tire springing, for that of the solid tire is inconsiderable, its function being to take up "dither" or, scientifically put, "short vibrations," and failure to compensate for this loss by an increase in the suspension springs., and the vehicle not only becomes extremely uncomfortable, but shakes itself to pieces. If the average car owner were content with a speed of fifteen miles an hour, the solid tire might be practical and fairly comfortable as well.

This has been demonstrated by a heavy steam car built in England and equipped

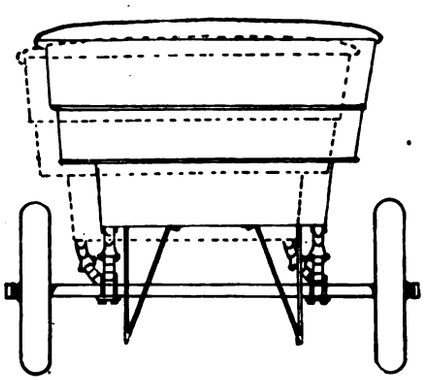


Fig. 2. Tendency of excessive lateral strain.

with solid tires, which behaved, at a speed of twenty miles an hour, very much like the pneumatic in taking irregularities in the road. The same total absence of vibration and shock was noticeable. To accomplish this an elliptical spring with a minimum play of 6 inches and compressed to 50 per cent. of its total capacity by the normal load at all times. That is, the spring unloaded as shown in the sketch would show an opening of 12 inches. This, reduced by the normal load to six inches, resulted in a suspension sensitive to a weight of a few pounds, such as a small dog running about in the body of the car, though the latter weighed 1½ tons.

The theoretically perfect spring should give so readily that in rising over an obstruction the wheel should not lift the vehicle body at all, the axle rising and falling beneath. Practice, of course, does not attain this, but

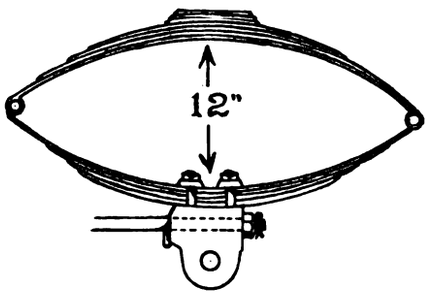


Fig. 3. Opening unloaded and articulation of spring attachment.

the combination of the pneumatic tire and half-loaded spring form a very close approach to it, while the size of the obstruction remains within the absorbing power of the spring.

But the double elliptic springs call forth quite a problem in their application to the automobile. According to all theories, the usual carriage spring attachment should be crippled, either longitudinally or transversely, by the first excessive shock received. The traction effort is solely on the running gear,

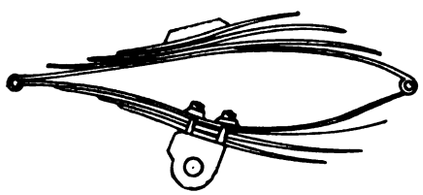


Fig. 4. Collapse from revolving about axle.

and whatever resistance the wheel encounters is resisted by the spring and its attachment unaided. The latter is usually nothing more than a pair of small clamps, top and bottom. The strains to which these small bolts are subjected are tremendous, but they very rarely give way.

It is probable that, so far as crippling longitudinally is concerned—that is, by allowing the axle to run back under the vehicle—that the ordinary attachment would suffice for

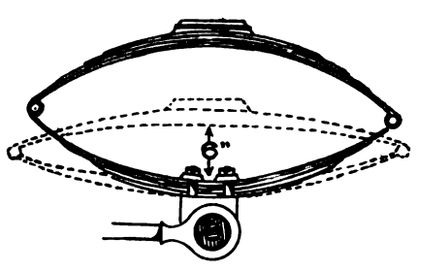


Fig. 5. Opening under normal load, and swivel method of attaching radius rod.

motor work as well, but in the case of transverse stresses the case is quite different.

In the first place, on account of the swing of driving chains, or the alignment of gear shafting, it is not permissible to have any

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excessive side swing in the body of the car, as compared with its wheels, and in the second place, these side stresses will be infinitely greater in motor than in horse-drawn work. Even if it were possible to take the horse-drawn vehicle straightaway over the road at the same speed as a motor, it would be impossible to take an iron-shod horse around a corner at the same speed that cars are usually driven, and this also limits the speed. Further, the carriage is also iron-shod ordinarily, of which the adhesion on the average road is only 30 per cent. of the weight, while that of the pneumatic tire is 70 per cent., so that the latter results in more than doubling the maximum possible side strains. In view of this, it is necessary to introduce some device corresponding to the horn plates of a locomotive to prevent lateral stress on the springs. Fig. 2.

This might be done by means of vertical rods, dependent from each side of the frame, and located close to the springs, as shown in the sketch illustrating by the dotted lines the deflection caused by side stress where nothing is interposed to prevent it.

To take care of longitudinal stresses is not so difficult. The rear axle, reinforced by radius rods, will take care of itself, but the front axle must be supported. The most common expedient is the reach bar—a device of American origin in universal use to-day on horse-drawn vehicles of many types, but long since relegated to the limbo of antiquated carriage makers' lore, where the automobile is concerned. It consisted simply of one or two wooden struts connecting the rear and front axles, keeping them in alignment. To obviate its use, independent radius rods may be employed on the front axle also, and the result should be a vehicle of great rigidity, both longitudinally and laterally, and at the same time with a great springing capacity.

Fig. 3 illustrates a method of radius rod practice in more or less general use, i. e., articulation of the spring attachment to a live rear axle in order to insure a more even distribution of the weight over the journal. It will be noted that the rod does not point toward the centre of the axle, and that any excessive stress in the direction of its length will be apt to cause the entire axle box to rotate backward around the axle. Sudden braking on the engine shaft, and not on the live axle, has caused this in some instances, and when the axle box goes backward, both parts of the spring come together, resulting in its collapse, somewhat after the manner shown in Figure 4. This, of course, may be obviated by so attaching the radius rod that its axis produced intersects the centre of the rear axle, or, again, to make it swivel about the axle itself, as shown in Figure 5.

Yet another method of provision against this is the form of rigid attachment used on the Milnes-Daimler omnibus. No articulation of the radius end is employed, and its dead end is screwed directly into the axle box, allowing the play of the spring to account for any relative motion of frame and axle and the resulting angular movement of the radius rod. The deflection of the springs in ordinary use would be much greater than any caused by the radius rod.

It must always be borne in mind that a spring settles in use, and one which may show six inches open under load when first put in service will show less in a few days, and after that will not decrease perceptibly. The great secret of comfortable springs is not to have them too strong or too weak, but how to calculate them for a certain weights and conditions is another matter. And it is not only difficult to arrive at without experimenting, but likewise to have a spring maker build such a spring without more definite specifications than merely the service, weight and opening under normal load. The following formula from the Practical Engineer's Pocketbook has been found satisfactory for calculating spring sizes for automobile work, k being 40,000 for single and 20,000 for double springs:

$$d = \frac{l^3}{k\,b\,t^3\,n}$$

n = number of plates.
t = thickness in inches.
b = breadth in inches.
l = total length.
k = about 40,000 for single.
d = deflection in inches per ton.

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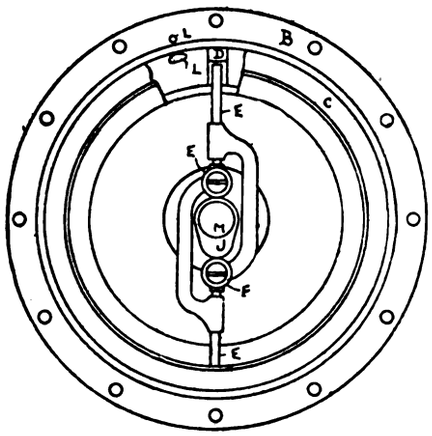
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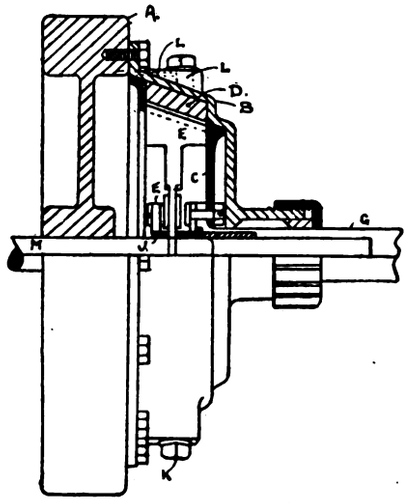
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HYDRAULIC CLUTCH

Another Effort to Eliminate the Evil of the Leather-Faced Varieties.

Hydraulic power as a means of overcoming some of the disadvantages inherent in the leather-faced type of cone clutch, now common, have seemingly come in for attention all of a sudden. Prior to the present year the course of development in the entire industry has probably no attempt on record to utilize this power for the purpose, while within the past few months no less than two systems have appeared to claim attention.





One of these, the Octopus, was described in the Motor World last week. The other, the Sparks-Boothby, likewise of English origin, differs radically from its compeer and possesses features of interest.

It will be noted by a reference to the sketches that in appearance it approximates closely to the ordinary type of leather coned clutch, but no facing is used, and when fully engaged there is no actual metallic contact between the external clutch member attached to the fly wheel and the internal sliding member, as a film of oil remains between the faces regardless of the amount of pressure brought to bear to force the clutch home.

A is the motor fly wheel keyed to crank (M). The casting (B), which forms the equivalent to the female portion of an ordinary clutch, is secured to the fly wheel by studs and nuts, as shown. It is so shaped that it forms a double cone, and is also provided with a stuffing box at H, through which the spindle (G) projects, thus forming an oil-tight case. The male portion (C) is mounted on the spindle (G), and is also stepconed, so that when in position in B, an annular chamber is formed.

Two slots are provided through C, into which two pallets (E) are fitted; these are shaped to fit the annular space, and are provided with rollers at F, which engage with the cam (J), which is mounted on a feather on motor shaft (M). The stop (D) is secured to the casting (B), and fits the annulus formed between B and C. The cam being always relative in position to stop D, positively withdraws the pallets as they approach the stop, and allows them to project again after passing stop (D) (springs not shown). The clutch shaft (G) is provided with a clip and trunnion ring, which is actuated by the clutch pedal in the ordinary way, a spring being used to return the clutch after being disengaged.

The whole of the case formed by casting (B) and fly wheel (A) is filled with oil through filler (K). In action the operations are as follows: Supposing the fly wheel to be revolving and the clutch pedal to be depressed (the gear being in), causing the shaft (G) with C to be moved into the interior of case. No resistance is offered the oil, as a considerable aperture is produced by the coned surfaces moving away from each other; but upon the pedal being gradualy released, this aperture is reduced in size, and resistance is offered between the pallets (E) and the stop (D), thus starting the car in motion. When the centre portion (C) is engaged in B, a joint is made which prevents the oil from escaping, except by the small passage (L), which conducts any pressure produced between stop (D) and pallet (E) to the back of the clutch, holding it firmly in position. The clutch is manufactured by the Gillett Motor Co., and has been exhaustively tested on a 12 horsepower car before being placed on the market.

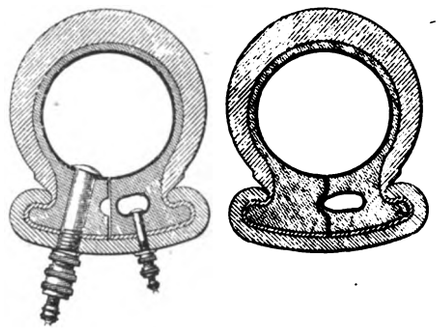
"Jackrabbit II" is the name of a new racing car now being built by Warren T. Walker, of the Winston & Walker Co., Minneapolis, Minn. "Jackrabbit I" made its appearance last year. It was a two cylinder, 8 horsepower affair, and won in several of the Hamline races. This year's engine will consist of four cylinders capable of developing 40 horsepower.

"The A. B. C. of Electricity" will aid you in understanding many things about motors that may now seem hard of understanding. Price 50 cents. The Goodman Co., 154 Nassau street, New York. ***

TUBELESS TIRE

Misplaced Ingenuity that Avoids the Inner Tube and then Adds Two Valves.

One more of those single tube tires, or, as they are termed on the other side, a "tubeless" tire, is shortly to be placed on the market in England. While the improvement is claimed to relate to the outer cover of the tire and the application of a sealing air tube for the purpose of converting the outer cover in what is generally known as a "tubeless tire," it would seem to be more in the nature of a method of fastening the tire in place by means of the latter device. This will be readily apparent from the sectional drawings showing the deflated tire just placed on the rim and after inflating. Appended is the description of the new invention, which is known as the "Tolson-Holmes Tubeless Tire":



"For this purpose the upper or tread portion of the outer cover or tire has at each lateral edge, extending around the tire or cover, thickened rubber or canvas, or both, of which the cover is composed, so that when the cover or tire is arched and inserted in the rim such thickened edges form a substantial or solid base adapted to approximately fill up the space within the rim.

"Through one thickened edge of the cover and from end to end thereof, an opening is formed through which a small tube is inserted, and in the opposite thickened edge so as to be in alignment with the said tube when the cover is inserted in the rim, is provided a groove or channel.

"After the edges of the cover have been passed into the rim, as shown in Fig. 2, air is pumped through a valve into the small tube, which on inflation forces the rubber on the side thereof nearest the opposing edge of the cover tightly into the recess or channel (as shown in Fig. 1), and thereby makes a perfectly airtight joint between the opposing edges of the cover and seals it up. Air is subsequently pumped through a valve into the interior of the cover or tire to inflate it as pneumatic tires are usually inflated, the inflation of the cover or tire serving still further to seal the joint or joints."

In other words, in the attempt to do away with one tube, the usual inner bladder, another is merely substituted in a different place, thus complicating simplicity and rendering the appellation "tubeless" a contradiction in terms.

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Will Issue Big Road Book.

None of the many automobile clubs or organizations having recognized the necessity of an up to date touring guide, the Hartford Rubber Works Co. has stepped into the breach and already has well under way a publication which, for the extent of territory covered and the thoroughness with which the work is done, should not only prove invaluable, but surpasses anything of the kind hitherto attempted.

An advance copy of the work, limited to a few pages, gives an idea of its completeness and the amount of valuable information that the finished volume will contain. This prospectus gives a sample of the maps, all of which have been specially prepared for this purpose, and the book is said to be the first to have this distinction.

Beside reliable maps, detailed lists of hotels, garages and repair men, with the exact limitations of the latter's facilities for emergency work are given. The territory covered extends from Cleveland, on the West, and Washington, on the South, to the Atlantic. Trips to the White Mountains, the Adirondacks and the best routes to Toronto, Montreal and Quebec are also given. It is one of the first works with any pretentions to up to date completeness that has not been compiled from old bicycle road books, and the amount of detail work entailed in its publication will doubtless be appreciated by the large army of tourists who have hitherto struggled in the dark. The price of the completed volume, handsomely bound, will be $2.

Seeks New Trial Because of Prejudice.

"If there is a prejudice against automobile owners," said Attorney James J. Quinn in the Hartford (Conn.) Superior Court on Friday, "that prejudice should be rebuked and jurors should be given to understand that all men, when they come into court, are equal, whether they drive automobiles or farm wagons."

Mr. Quinn asked Judge Edwin B. Gager to set aside the verdict for $200 recently given by the jury in favor of James O'Connor, of Wethersfield, against Sherman W. Freeman, of Hartford. Freeman is an automobile owner, and it was claimed by the plaintiff that one night last July the automobile driven by the defendant collided with his horse and wagon, killing the horse. O'Connor brought suit against Sherman to recover damages.

Mr. Quinn told Judge Gager that he believed the verdict was against the evidence, and he said that during the trial the feeling was rife in the courthouse that his client had a good case and should win, but it was said that he could not possibly do so, as he was an automobile owner, and the verdict of the jury bore out this assertion.

Judge Gager reserved decision.

Claremont and Pomona, two California towns are to be connected by an automobile stage line, under the management of the Automobile Livery Co., Los Angeles, Cal.

Widow of Oldfield's Victim Wants $5000.

Mrs. Ellen Scott, widow of John Scott, who was killed in the automobile accident at St. Louis, August 28, last year, when Barney Oldfield, went through the fence in a ten-mile race, has brought suit for $5,000 damages against George B. Sidener, one of the judges, and the Peerless Motor Car Co.

In her petition Mrs. Scott alleges that the accident was the result of carelessness and negligence on the part of the management, as the track was dusty and not fit for racing. She further states that her husband was employed as watchman on the grounds, and that his duties kept him near the railing where the accident took place.

Miss Ruby Must Pay Her Fine.

Miss Ruby Fullerton, of St. Louis, Mo., must pay the fine which was imposed upon her for driving her car at a greater speed than nine miles an hour in St. Louis county, in violation of an act passed by the General Assembly. An indictment was returned against her by the grand jury at the time, but Miss Fullerton immediately filed a demurrer by her attorney, asking that the indictment be quashed on grounds of unconstitutionality. Judge John W. McElhinney has sustained the indictment, and so that he "may not be misunderstood," as he expresses it, has handed down a written opinion in the case.

No other automobile has been so widely copied as the celebrated Mercedes, built by the Daimler Motoren Gesellschaft, lately of Cannstatt, now of Unterturkheim, Germany. But there is only one complete, authorized duplicate of this splendid machine. It is called the

AMERICAN MERCEDES,

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CHAS. H. ROCKWELL, Traffic Man.

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The Week's Patents.

782,369. Acetylene Gas Generator. John S. Thomas, South McAlester, and George Hudson, Blanco, Ind. Ter. Filed July 5, 1904. Serial No. 215,294.

Claim.—1. As an article of manufacture, an acetylene gas generator, comprising a water tank open at the top and closed at the bottom, a submerged floating gas generating tank, open at the bottom and having a perforated top, centrally located and secured in said water tank, a carbid reservoir secured within the gas generating tank, means for holding the carbid reservoir in place, means for applying a downward pressure on the carbid within said reservoir, a cooling chamber having a cone-shaped roof secured within the water tank above the generating tank, condensing pipes connecting the gas generating tank and the cooling chamber, circulating pipes within the water tank for cooling the water therein, a water supplying can for maintaining the water in the water tank at a uniform level, means for securing in and removing the interior parts mentioned from the water tank, a jet pipe for permitting the gas to flow out, and a stop-cock for regulating the flow of the gas, substantially as specified.

782,379. Rubber Tires. Clarence H. Bryan, Chicago, Ill. Filed July 28, 1904. Serial No. 218,470.

Claim.—1. The combination of a vehicle wheel with an elastic tire having apertures therein and means to connect the tire with the rim comprising members movable with respect to the rim and adapted to extend into the apertures, such apertures being of sufficient size to permit play between such members and the tire, when the tire is in use.

782,465. Vehicle Wheel. Edward L. Perry, Paterson, N. J. Filed October 5, 1904. Serial No. 227,252.

Claim.—1. A vehicle wheel and a suitable rim therefor, an elastic perforated tire held therein, and a plurality of gripping pins loosely supported upon the rim, and the outer ends engaging the perforation in said tire, substantially as and for the purpose set forth.

782,481. Friction Clutch Power Transmitter. Stockton Borton, Providence, R. I., assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y., a Corporation of New York. Filed March 23, 1903. Serial No. 149,150.

Claim.—1. In a friction clutch power transmitter, a driven pulley or wheel, a driving pulley or wheel for imparting rotary movement to the driven pulley by frictional contact therewith, bearings for the pulleys comprising a non-rotating shaft and anti-friction balls or analogous means interposed between the shaft and pulleys, a lever adapted to bear at one end against a non-rotating part of the bearings of one pulley to force the pulleys into frictional contact and at its other end to make contact with the driven pulley and act as a brake therefor, and a spring exerting its tension to force the pulleys out of frictional contact and the lever into braking contact with the driven pulley.

782,502. Attachment for Explosive Engines. William B. Hayden, New York, N. Y. Filed February 15, 1904. Serial No. 193,621.

Claim.—1. The combination of an electrical generator, a gearing for operating it, an engine for operating the gearing, a rotatable spring connection between the engine and gearing for operating the latter, said connection operated by the engine and adapted when operated to store up energy, means for discontinuing the operation of the generator and said gearing in advance of the discontinuing of the operation of the engine, thereby storing up energy in said connection, and means to release the generator so as to cause it to be operated by the energy stored in said connection.

782,520. Vehicle. Eugene Pearl, Passaic, N. J. Filed May 16, 1904. Serial No. 208,305.

Claim.—1. In a vehicle, the combination of the frame and body thereof, extensible connections between the body and frame for adjusting one relatively to the other, an individual controlling device for each connection, and operating means common to the several connections.

782,532. Lubricator. Glenn W. Thurston, Chicago, Ill. Filed November 18, 1904. Serial No. 233,382.

Claim.—1. A vacuum-operated lubricator consisting, essentially of an oil reservoir, an adjusting valve therein adapted to control the discharge of the lubricant, a dropper as described, a valve case having two chambers, one of which connects with the oil reservoir and the other with the point of lubrication, a cap closing the latter chamber, a valve in this chamber adapted to open under the influence of a vacuum in said chamber, and means for establishing communication between the two chambers, as set forth.

782,547. Variable Speed Gearing. Bassett M. Coffee, Richmond, Va., assignor of one-fourth to William J. Whitehurst, Richmond, Va. Filed December 31, 1902. Serial No. 137,255.

Claim.—1. A variable-speed gearing, comprising a drive shaft, a drive pinion fixedly secured thereto, a second pinion adjacent the first pinion loosely mounted on the said shaft, a casing loosely mounted on the drive shaft and having cutaway portions, a sprocket wheel axially and fixedly connected to the casing, two sets of planet gears carried by the casing and projecting through the cutaway portion, one set of which meshes with the fixedly-held pinion, the other set meshing with the loosely-held pinion, said planet gears also meshing with each other, a pair of brake rims mounted on the periphery of the casing, each having an internal rack face, one of said rims meshing with one set of planet gears, and the other rim meshing

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PIERCE 2-cylinder Arrow, with canopy top, run only Fifteen Hundred Miles, in fine condition, - - - - - $1500.00
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For further particulars, write MILLER MUNDY MOTOR CAR CO., Utica, N. Y.

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FANNING Electric Runabout. New and complete, less batteries. Best offer takes it. List price, complete, $750. Address Drawer D, Albany, N. Y.

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TO PACKARD BUYERS—We have one second hand 22 H. P. Packard, refinished throughout with headlight, side hampers, canopy top, complete, $2850; also one Model "A" Franklin, with rear deck hamper, mahogany canopy, headlights, etc., $1200; one Cadillac Model "B" complete, at $650. CENTAUR MOTOR COMPANY, Buffalo, N. Y.

TO PACKARD DEALERS—We will refund your deposit and pay you premium of $350 each on any 28 H. P. Model "N" Packard that you have contracted for and will release to us. CENTAUR MOTOR COMPANY, Buffalo, N. Y.

FOR SALE—One brand new Crestmobile without tonneau; never been run; $475. HUB AUTO. EXCHANGE, 195 Freeport St. Dorchester, Mass.

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with the other set of planet gears, a means for braking either one of said rims, substantially as shown and for the purposes described.

782,548. Controller for Automobiles. Edward N. Dickerson, Stovall, N. C. Filed November 1, 1904. Serial No. 230,926.

Claim.—1. In a motor car mechanism, the combination of a release pedal and a throttle and mechanism by which the operator of the release pedal closes the throttle and allows the throttle to be independently set when the release pedal engages the motor with the transmission mechanism of the car, substantially as described.

782,560. Elastic Power Transmission Device. George H. Harris, Stockton, Cal. Filed January 15, 1904. Serial No. 189,088.

Claim.—A device of the character described, consisting of a shaft, a disk loose thereon and having a projecting hub, a second disk fixed to the shaft, said second disk having a concaved channel opposing the adjacent side of the other disk, and said other disk having concavities arranged equidistant in its side with lugs projecting laterally from the ends of said concavities, other lugs projecting laterally from the channel of the first named disk and overlapping and spaced from the first-named lugs, elastic cushions interposed between the lugs, bolts extending through the lugs and cushions, other bolts parallel with the shaft and connecting the two disks, one of said disks having sprocket teeth and the other disk having slots for the second-named bolts whereby one disk is movable axially relative to the other.

782,590. Lubricator. George M. Wolcott and Robert Davidson, Detroit, Mich., assignors to Michigan Lubricator Company, Detroit, Mich., a corporation. Filed May 7, 1904. Serial No. 206,821.

Claim.—1. In a lubricator, the combination with the reservoir, of a sight-feed chamber communicating with the reservoir, there being an oil discharge port leading from said sight-feed chamber and a passageway connecting said oil discharge port with the top of the reservoir, and means for automatically closing the opening of the oil-discharge port into the sight-feed chamber upon the creation of an upward pressure within said port.

782,624. Steam Motor Car. Jean A. Rey and Jean M. B. Rey, Paris, France. Filed March 24, 1903. Serial No. 149,302.

Claim.—1. In a power system, the combination, with a furnace, a boiler, a motor and suitable connections, of a fuel pump, and the furnace, bewd wd wdewd wd dd a ater pump, valves located, respectively, between the fuel pump and the furnace, between the water pump and the boiler and between the boiler and the motor, and means for simultaneously operating said valves.

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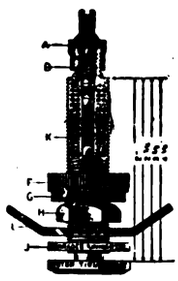
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Automobiles were exhibited at the Chicago Automobile Show.

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22 OF THE 30

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FIRESTONE SIDE-WIRE TIRES.

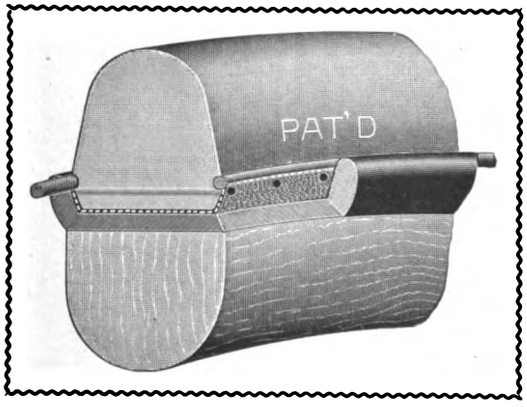
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were pleasure cars.

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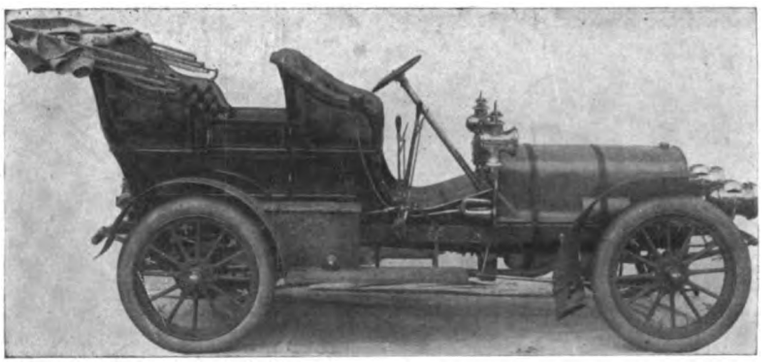
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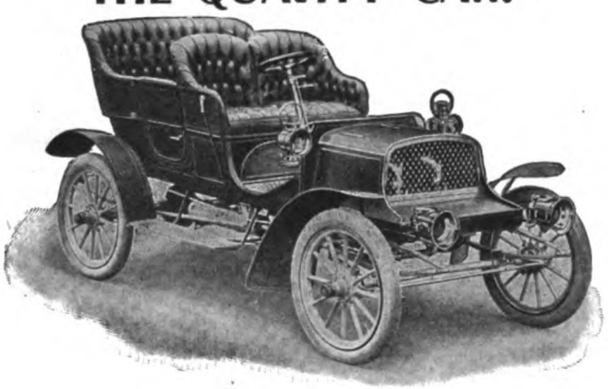
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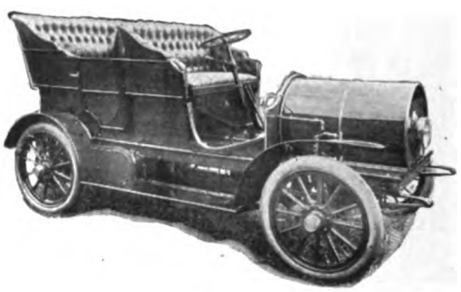


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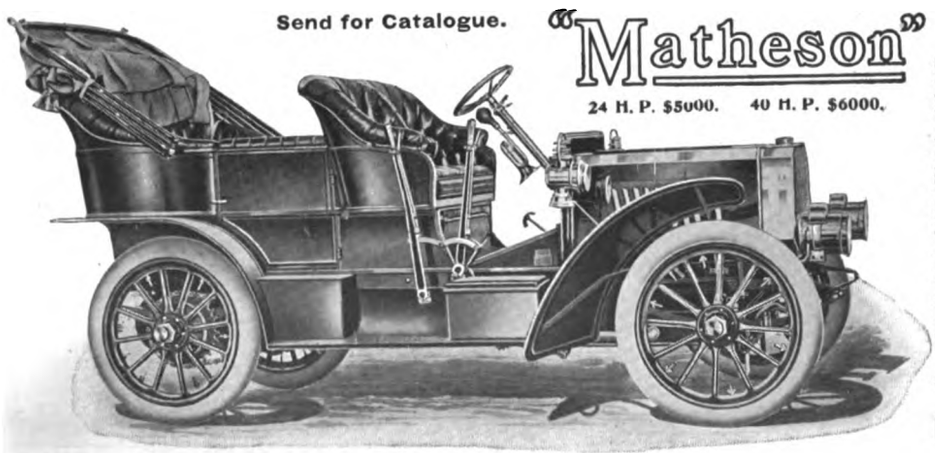
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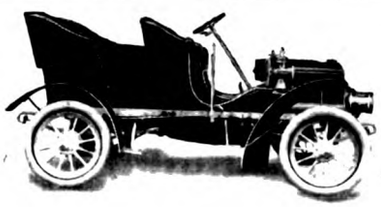
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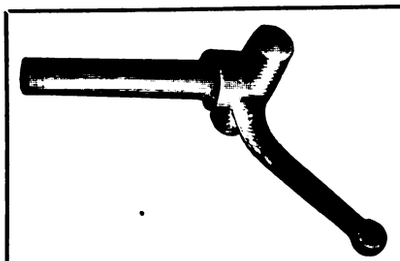
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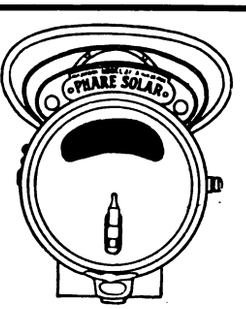


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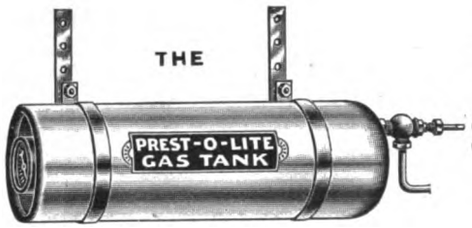
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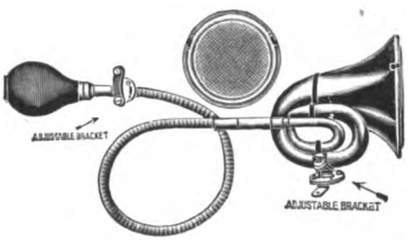
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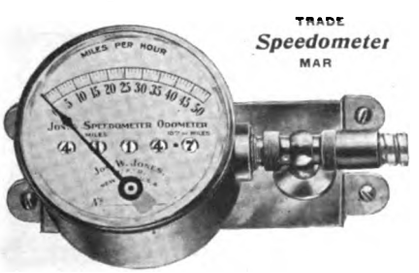


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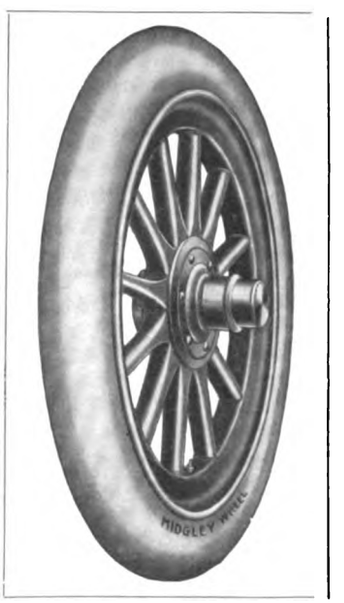
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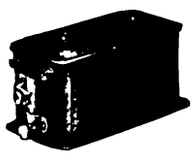
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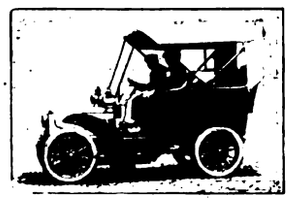
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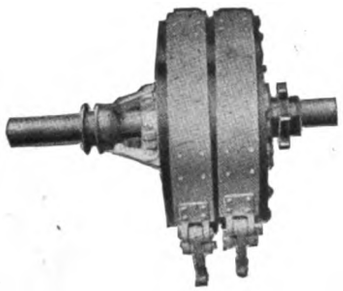
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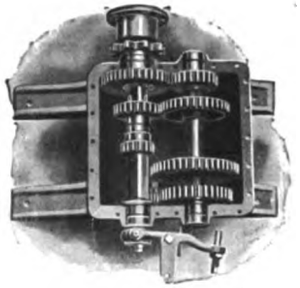
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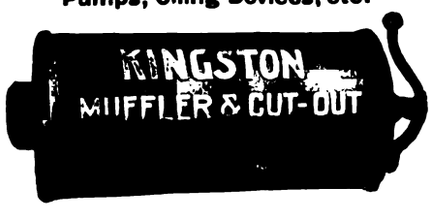
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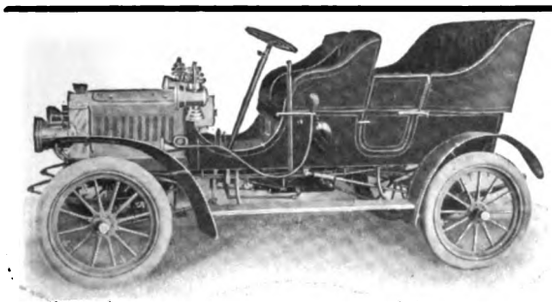
The smoking room in the parlor car is the most commodious ever seen on any train entering here. It is so constructed that it is absolutely private from the rest of the car, and has accommodations for 11 lovers of the weed at one time. At the rear of this car is a plate glass observation platform. The beautiful moving palace has wide vestibules, and each car has its own electrical apparatus for lighting, in addition to the Pintsch gas system.

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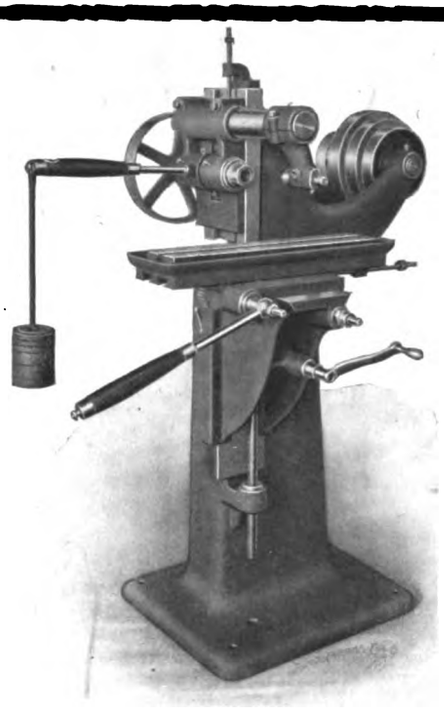
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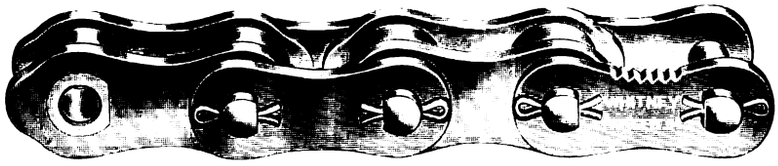
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1 in.	5/8 in.
1¼ in.	¾ in.
1½ in.	⅞ in.
1¾ in.	1 in.
2 in.	1⅛ in.

The PITCH SIZES and DIAMETERS advance uniformly in perfect proportion. They have broken all records for efficiency, and have been adopted for most of the leading American Cars, including

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PITCH.	Diameter of Roll.
1 in.	9-16 in.
1¼ in.	5/8 in.
1½ in.	¾ in.
1¾ in.	1 in.
2 in	1⅛ in.

These are the OLD or COMPETING Standards.

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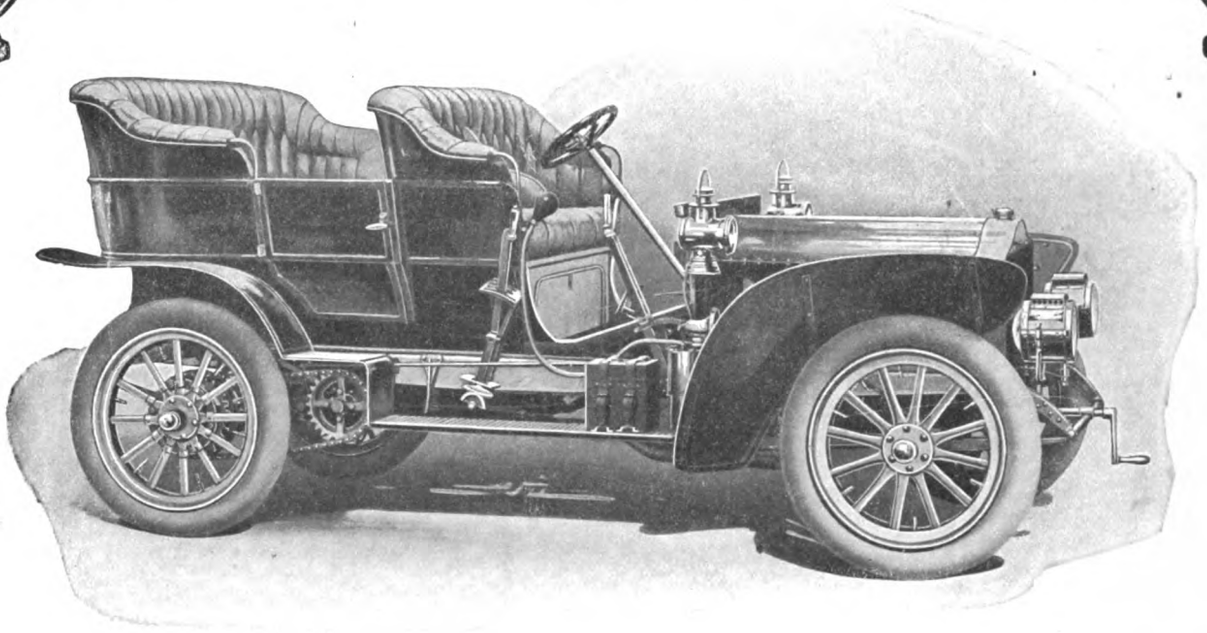
The Motor World

Volume IX
No. 26

New York, N. Y., U. S. A., March 23, 1905.

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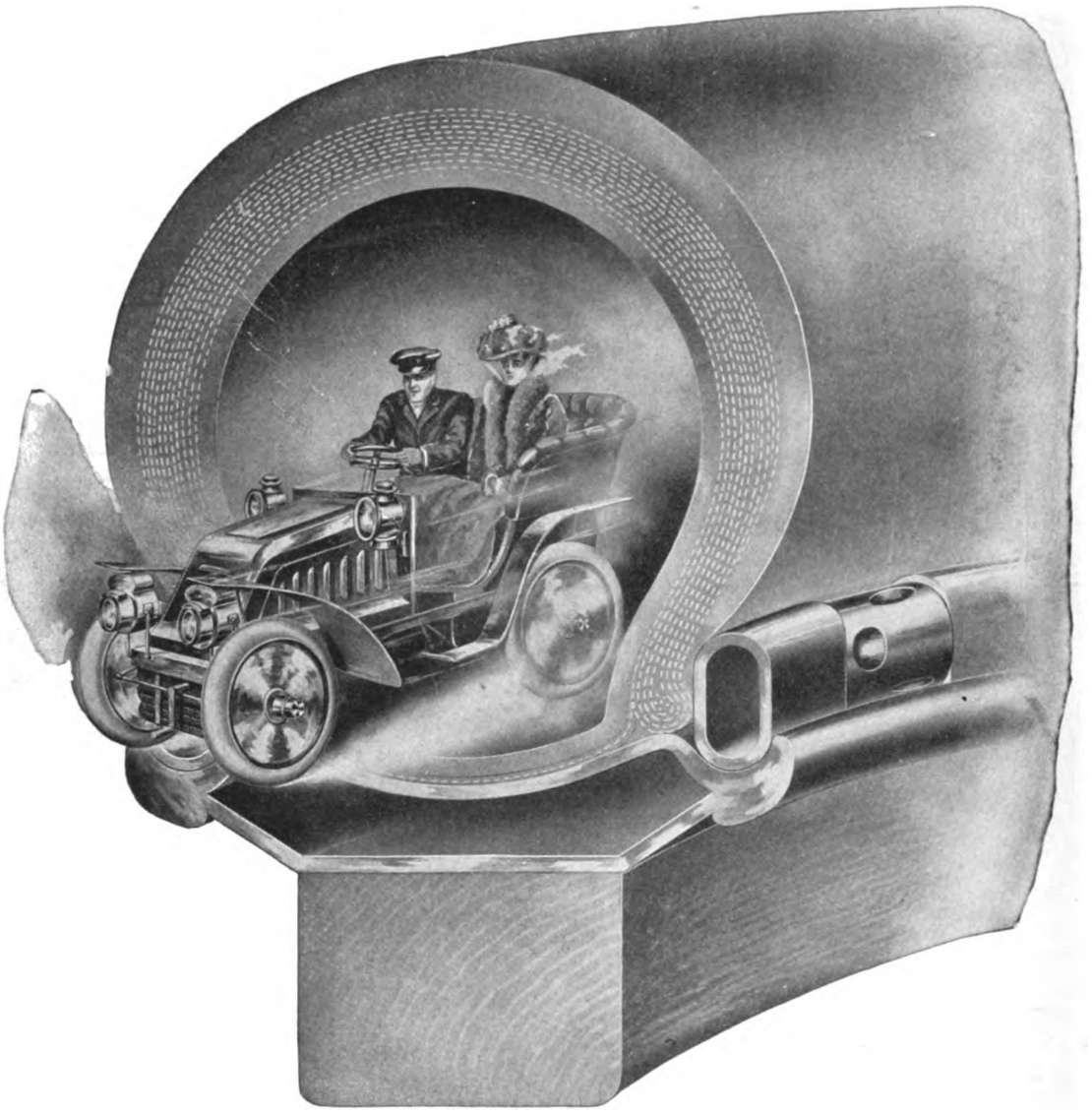
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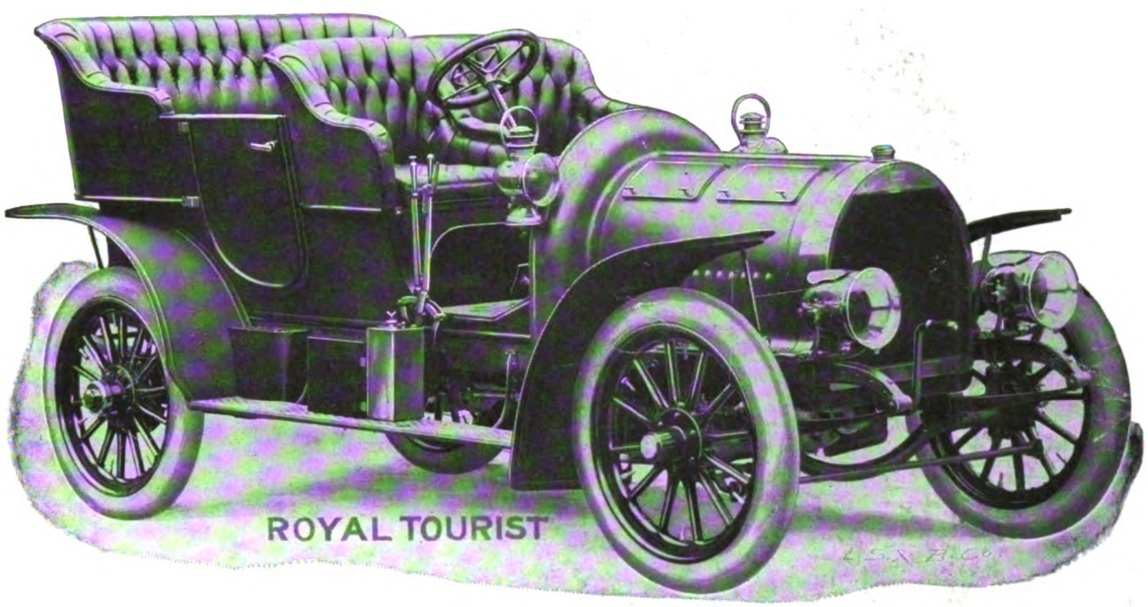
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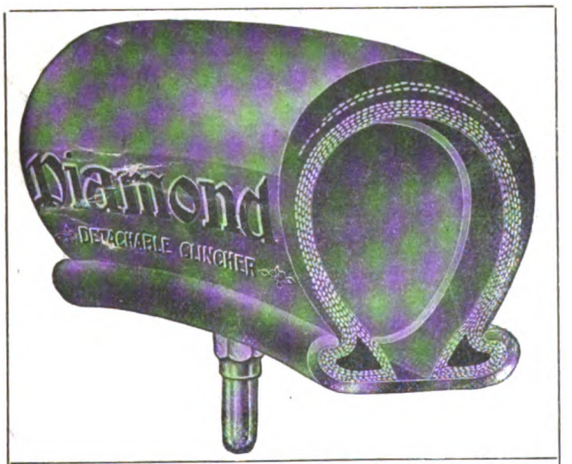
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MORE Diamond WRAPPED TREAD DETACHABLE CLINCHER TIRES

THAN ANY OTHER TWO MAKES COMBINED.



Rims branded in the channel with this copyrighted mark have been inspected and pronounced perfect. We guarantee our tires only on rims so branded.



63 SETS OF THEM ON CARS

exhibited at the Boston Show, against 56 Sets for the two next highest makes together.

The Popular Verdict on Wrapped Tread Construction as Gauged by Tire Equipment at all the Automobile Shows thus far held, now stands:

DIAMOND Wrapped Tread Construction,	**325 Sets.**
Nearest Competitor,	**177 Sets.**
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BOSTON
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DETROIT
310 Woodward Ave.
CLEVELAND
323 Huron St.

THE DIAMOND RUBBER COMPANY.

AKRON, OHIO

BRANCHES

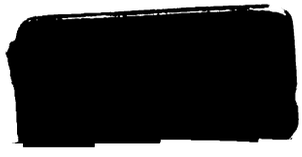
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SAN FRANCISCO
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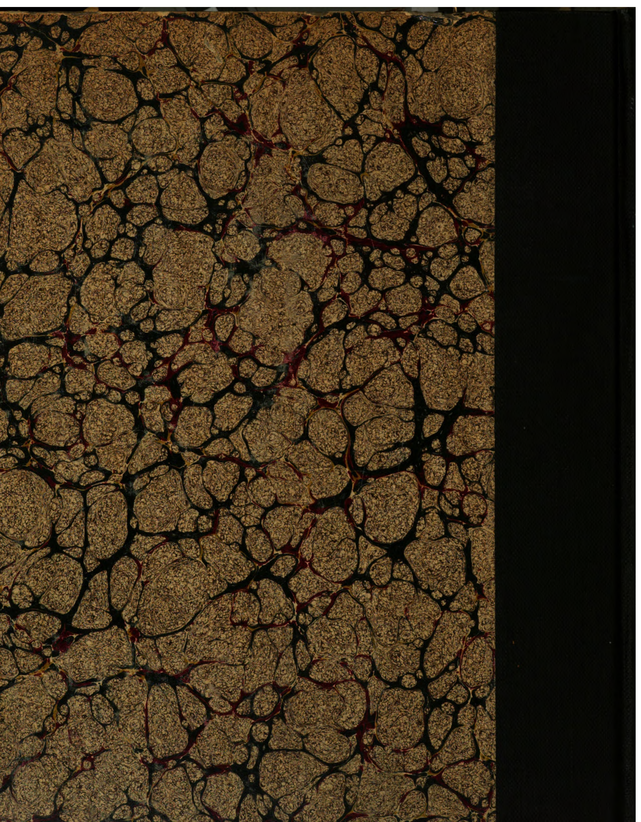
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